How Inequalities Develop through Childhood: Life-course Evidence from Young Lives Cohort Study

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Life Course Evidence from the Young Lives Cohort Study

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Young Lives
An International Study of Childhood Poverty

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How Inequalities Develop through Childhood: Life Course Evidence from the Young Lives Cohort Study

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1. Introduction

Tackling poverty and inequalities is now embedded within the mandates of governments and organizations worldwide. UNICEF has been a leader on this, and concern about inequalities has also been picked up in the debates surrounding post 2015 development goals. While not explicitly framed as targeting inequalities, the High Level Panel report 2013 makes it a priority to ensure no one is 'left behind' (UN, 2013). The Open Working Group on the Sustainable Development Goals (SDGs) went further by proposing a specific goal on inequalities (OWG, 2014), which has been retained within the UN Secretary General's synthesis report on the SDGs, which is entitled "Ending Poverty, Transforming All Lives and Protecting the Planet" (UNSG, 2014). To deliver on that central agenda requires engaging in the processes of how and why inequalities emerge; their impact on children's lives and future prospects; the extent to which inequalities in individual capacities contribute to the intergenerational transmission of disadvantage; and the most promising entry points for policy and programming.

This paper contributes longitudinal research evidence on these issues, notably: the impact of structural inequalities on children's development within households and communities; the ways access to health, education and other key services may reduce or amplify inequalities; and especially evidence on the ways that children's developmental trajectories diverge from early in life, through to early adulthood. The paper is based primarily on findings from Young Lives, an ongoing four country, two cohort, fifteen-year longitudinal study of 12,000 children growing up in poverty, in diverse sites in Ethiopia, India (in the State of Andhra Pradesh[1]), Peru and Vietnam (see www.younglives.org.uk). The Young Lives study was set up just after the Millennium Development Goals (MDGs) were established, to better understand the lives of children growing up in poverty. As the world moves towards agreeing new Sustainable Development Goals to follow the MDGs, this is an appropriate time to examine what has been learned.

Our starting point for the paper is a series of key questions about how inequalities develop through the lifecourse:

1. What are the main features of children's physical, cognitive, psychosocial developmental trajectories; and how do these domains interact in shaping outcomes and well-being?

2. What are the most significant factors that shape these trajectories? By extension, what might support better child development, promote resilience or help children who have fallen behind?

[1] The data used in this report were collected in the old, united State of Andhra Pradesh. In June 2014, this State was split into new Andhra Pradesh and Telangana. References in this paper to Andhra Pradesh therefore refer to the State lines which existed when the data was collected.

3. What role does the timing of events, influences and institutions play in shaping the outcomes?

A few initial examples highlight the ways Young Lives longitudinal cohort study is contributing evidence on developing inequalities:

- By the age of 8 years, almost all Young Lives Ethiopian children growing up in the poorest third of households had some level of difficulty in reading in their mother tongue (94%), compared with just under half of those children in the least poor third of households (45%).
- By the age of 12 years, the stunting rate of the poorest third of children in the Peru sample was four times greater than the stunting rate of the least poor children (37% compared with 9%).
- By the age of 15 years the education enrolment rate of the least poor third of Young Lives children in Vietnam was 40% higher than that of the poorest third of children (89% compared with 62%).
- By the age of 19 years young women in the rural Andhra Pradesh sample were more than twice as likely to have become a mother than young women in the urban sample (24% versus 11%).

These examples draw attention to emerging differences between groups of children related to their ethnicity, poverty, gender, living conditions, schooling and other circumstances. Importantly, they also draw attention to overall levels of development that are lower than expected norms for whole populations. Research typically identifies differences at specific age points, notably via cross-sectional designs. The advantage of a longitudinal study is in revealing a complex, dynamic, multi-dimensional story spanning the life course. Life course perspectives contribute to understanding more about the history and timing of influences on children's experiences, opportunities and outcomes, including which events and interventions have greatest impact on children's development and well-being; all of which is relevant to designing policies and planning interventions.

The rest of this introduction provides further details on the Young Lives study design, followed by a review of key concepts in life course research. The main body of the paper is in three sections each summarizing a major stream of Young Lives research:

- Tracing **children's developmental trajectories**, examining physical, cognitive and psychosocial development, as well as the links between these domains.
- Examining the **changing household contexts** in which children are growing up which shapes and filters children's developmental trajectories.

- Tracing how children **transition through schooling institutions** and their engagement with wider social processes as they move through later childhood.

Finally, the paper discusses policy and programming implications of Young Lives longitudinal research to date.

A longitudinal cohort study

Despite the scientific and policy potential of longitudinal analysis, cost and capacity mean that cohort data are rare, particularly in developing countries. Young Lives is unique in spanning four countries, two cohorts, diverse locations, and employing a mixed method design. The 'older cohort' was born in 1994/5 and the 'younger cohort' born in 2000/1. Household, caregiver and child surveys have been conducted in 2002, 2006, 2009, 2013/14, with a further round planned for 2016. In this way, field workers have been visiting communities and interviewing families and children at key age points during early childhood, middle childhood, adolescence, and into early adulthood. These surveys track: changing poverty circumstances, risks and opportunities, aspirations for and of children; health, nutritional, educational, and personal histories; children's time use, including domestic responsibilities, employment as well as school attendance; access to key services – health, education and social protection; cognitive, psychosocial, educational and other developmental outcomes.

Core household surveys are complemented by school surveys embedded within country specific education systems, curricula, including specially designed achievement tests. Survey and psychometric data is complemented by qualitative longitudinal research with a subsample of approximately 200 young people and their caregivers, nested within the wider Young Lives sample across all four countries.

The initial sample was drawn from 20 geographic areas in each country, selected to be broadly (not necessarily nationally) representative of the diverse living conditions in each country (geographic, livelihood, ethnic and so on). The sampling design excludes the most affluent households, so that Young Lives is based on a 'pro-poor' sample, which means evidence on inequalities is most likely to be an underestimate. For detailed notes on sampling design, including comparisons with national indicators, see Outes-Leon and Sanchez 2008; Kumra 2008; Escobal and Flores 2008; Nguyen 2008). The key strength of the study is to follow the experiences of the same children as they grow up, in order to identify dynamic trends, key influences and outcomes. While sampling differences mean we do not use the data to compare countries directly (for example in learning levels, stunting and so on) the comparative nature of the study enables us to test similarities and differences in the factors which seem to matter most for children across the four countries.

It is a feature of cohort studies that the evidence typically becomes more powerful as successive rounds of data are collected within the longitudinal design. At the time of writing, late 2014, the first three rounds of core survey data have been collected and analysed – we have detailed evidence on the early life course stages of an older cohort (aged 8 to 15 years) and a younger cohort (aged 1 to 8 years). These first three rounds are the main source for this paper, but with new findings emerging from the fourth round also included where possible (see also Dornan and Pells, 2014).

Life course perspectives on the development of inequalities

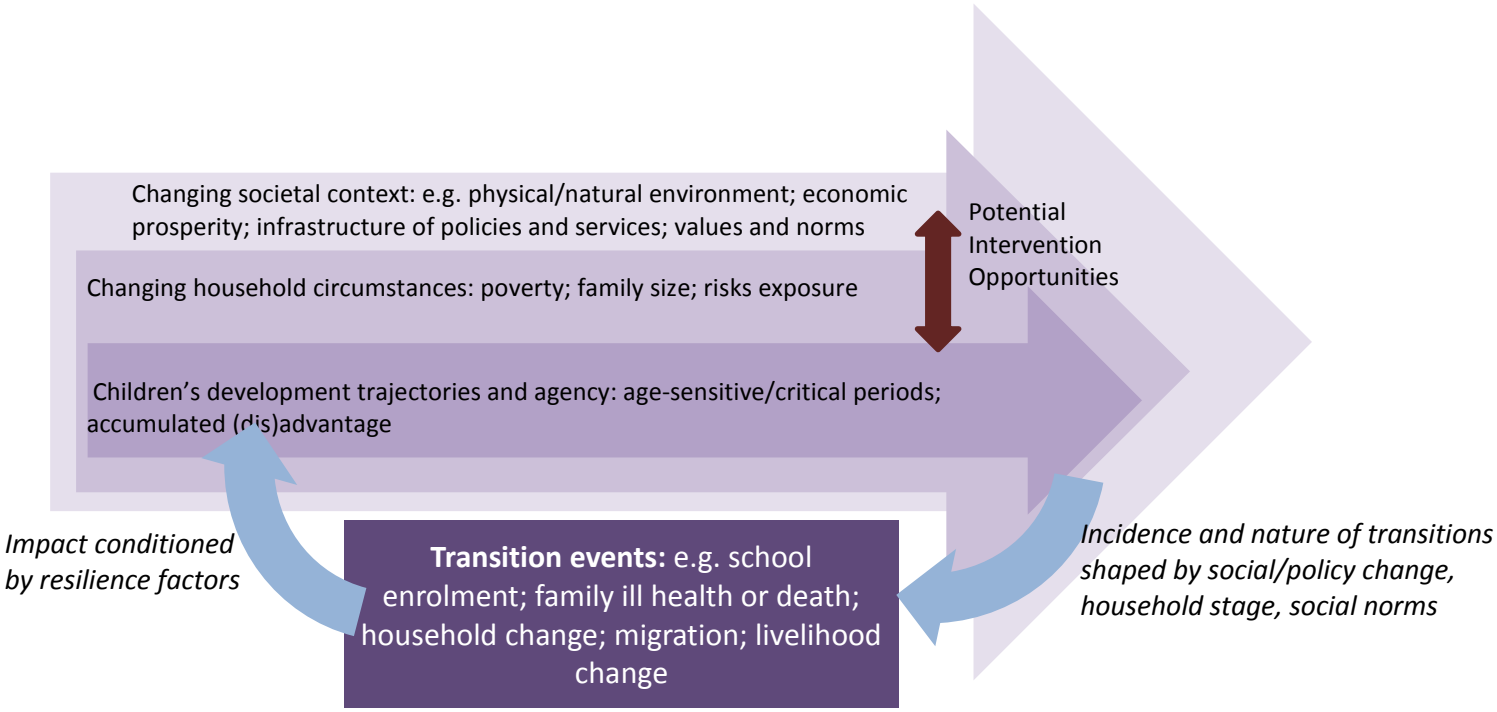
Numerous concepts inform the research in this area, including analysis based on the life course, the life cycle, life stages, transitions, and trajectories. Since life course study has attracted the interest of researchers from different disciplines, no one single method prevails. Two broad approaches can be identified. The first sets out, often quantitatively, to analyse the impact of earlier circumstances on later outcomes, such as the impact of early nutrition or quality of care on physical and social development. The second approach gives more of a focus to how time, individual agency, culture and institutions influence the trajectories and turning points individuals experience at different life stages. This paper draws on both of these approaches in the sections that follow.

Figure 1 summarises central concepts used in the paper. Children's trajectories are at the centre of the model; the outer layers recognise that children's development is nested within household contexts, which are also changing over time, and children are themselves active in shaping their development, according to their capacities, agency and identity (Sameroff 2009). Within the household, parents and others typically shape the aspirations for children's development, the resources, the risks and the protective factors, but impacts vary between children depending partly on their role within households (Schaffer, 1996). This household context is then also shaped by a broader social context, including the environment, economy and social norms (Bronfenbrenner, 1979). Household, community and institutional influences mediate the development of children's capacities and in due course the intergenerational transmission of poverty, as circumstances in childhood shape later opportunities (Bird and Higgins, 2011).

Within a systemic framework, policy and programming can also be seen as working both directly and indirectly to shape children's development, including modifying inequalities in experiences and outcomes. For example: social protection affects household poverty and so shapes child well-being; nutrition programmes reduce stunting and improve cognition; early childhood programmes increase children's chances of successful transition into school. The paper is structured to explore these different layers across the life course, which become crystallized in children's experience of life phases and transitions, including critical developmental

episodes as well as more institutionalised 'gateways' that shape individual pathways and trajectories.

Figure 1: Life course influences on children's development



Critical or sensitive periods of human development have a particular resonance in policy discussion, drawing attention to 'windows of opportunity' for prevention and intervention. Debate has focused on the 'first 1000 days' after conception (see UNICEF, 2013), especially in light of evidence about 'loss of developmental potential' during the earliest years (Grantham-McGregor et al. 2007). Some recent work counter-balances concerns about irreversibility, identifying the potential for recovery after early remedial interventions (Alderman and Walker, 2014, see also section 2). Most recently, adolescence has received UNICEF and WHO attention as another window of opportunity, a key transitional period in children's lives, with long term consequences for biological and social changes occurring during that life phase (UNICEF, 2011; WHO, 2014). Attention is especially focused on the nutrition, health and well-being of adolescent girls, as mothers-to-be, recognising that maternal under-nutrition impacts infant's birth weight (Black et al, 2008), and may affect growth and development, perpetuating an intergenerational vicious cycle.

However, understanding children's development through the life-course requires a broader framework, not just about children's development, but also about the social processes affecting households, as these in turn impact children. The 'family life cycle' (Carter and McGoldrick, 1999) identifies patterns of vulnerability in households; for example, households are more likely to become poor when they have children and needs increase; resources improve as children start to work; and then adults become poor

as they grow older and their work capacity decreases. The capacity to absorb shocks without detriment to children's well-being is similarly likely to depend on changing household conditions.

Another key insight of life course research is the need to see individual lives in a context of social and historical change, and recognise the subtle differences in the impact of risks and opportunities according to children's age, gender and their role in the household (Elder, 1999; Mortimer and Shanahan, 2004), where 'proximal' processes of development and learning are shaped by more 'distal' social and economic context. And in so far as the concept of childhood and expectations of children are socially constructed, attitudes towards children and young people, aspirations for their present and future lives, and so the responsibilities expected of them, are part of the changing environment that shapes their trajectories (Green, 2010, p.73).

The contexts in which children are growing up have altered rapidly in recent decades across most regions of the world, with longer periods in preschool and school, later entry to the labour market, and later marriage and childbearing (Lloyd, 2005, p.2), though such changes may not be experienced equally rapidly by all groups in society (Lenhardt and Shepherd, 2013, see Table 14). Analysis of the experiences of the two Young Lives cohorts (born seven years apart) provides insights into how social and economic change is affecting child's lives, (Pells et al. 2013; Pells and Woodhead 2014).

Sociologically and anthropologically informed research provides additional insight into key concepts of trajectories and transitions:

> *Transitions refer to changes in status that are discrete and bounded in duration, although their consequences may be long-term. Trajectories are long-term patterns of stability and change often including multiple transitions, that can be reliably differentiated from alternative patterns. (George, 1993, p. 358)*

Trajectories therefore relate to the general paths by which children accumulate capacities as they grow; they are punctuated by transitions, sometimes called 'critical junctures', such as school enrolment or family illness, which may prove turning points (for good or ill) within longer-term processes of children's development. For example, households living in urban areas with sufficient resources may be able to access a quality preschool for their children; in turn children doing well at preschool may improve their chances as they make the adjustment into primary school, and so on. Other households, e.g. living in remote areas or from a minority group, may not access preschool, and may face barriers of language and culture at the 'gateway' into school (Ames et al , 2010).

For a review of transition concepts relevant to early childhood, see Vogler et al 2008). Later on, the 'opportunity costs' of enrolling children in school rises for the poorest families, which may trigger early exit from schooling,

reinforcing a 'low skill pathway' leading to later poverty. Of course decisions about school enrolment and drop-out (or 'push-out', see Lewin, 2011) are often shaped in turn by institutional factors, such as school quality, and household considerations, notably expectations of girls and boys maturing into adolescence. Other writers have used the term 'vital conjuncture' to emphasise the coming together of processes to impact later outcomes, rather than assume pathways are linear (see Johnson-Hanks, 2002; Jeffrey, 2010).

Epidemiological, and now micro-economic, approaches typically use statistical techniques drawing on individual-level data to link later health and development outcomes back to earlier circumstances. Later outcomes are understood either as an accumulation of adverse circumstances over time; or as the result of particular – age-bound – critical or sensitive periods when the consequences of deprivation may be magnified, with long-term consequences which are either impossible or hard to reverse (see, for example, Ben-Shlomo and Kuh, 2002). The foetal origins hypothesis recognises that 'critical periods' of deprivation can occur before birth (Eriksson, 2005), expanding the scope of life course analysis. Roseboom et al. (2001) provide an example, citing the health in adulthood of children conceived during the Dutch famine during World War II. The famine was the result of a starvation policy, imposed as a reprisal by German forces in the later stages of the war. Later analysis has identified a link between foetal malnutrition, caused by the famine, and worse adult health, with the degree of impact depending on the stage of pregnancy in which the famine was experienced (ibid., p.96).

Finally, the concepts of vulnerability, resilience and protective factors offer a linked set of concepts that have been employed to make sense of the unpredictability of linkages between the experience of risk and adverse outcomes. In other words, children exposed to the same trauma or hazard may respond very differently, with very variable long-term consequences. Resilience may be an inherent characteristic of the individual – either of his or her biological make up, or of his or her ability to cope with adverse circumstances (see for example Rutter, 2012), but the term 'resilience' also acknowledges the extent to which conditions around the child – e.g. household and community support, and access to services – provide protective buffers which moderate the impact of adverse events on children. Acknowledging the ways wider factors shape children's vulnerability or resilience is preferable to a deficit model where 'failures' are viewed as individual weakness (Bronfenbrenner, 1979, p.290; Seccombe 2002; Pells, 2012). The concept of 'developmental cascades' has been coined to the cumulative consequences for development of the many interactions and transactions occurring in developing systems, at every level (Masten and Cicchetti, 2010).

In summary:

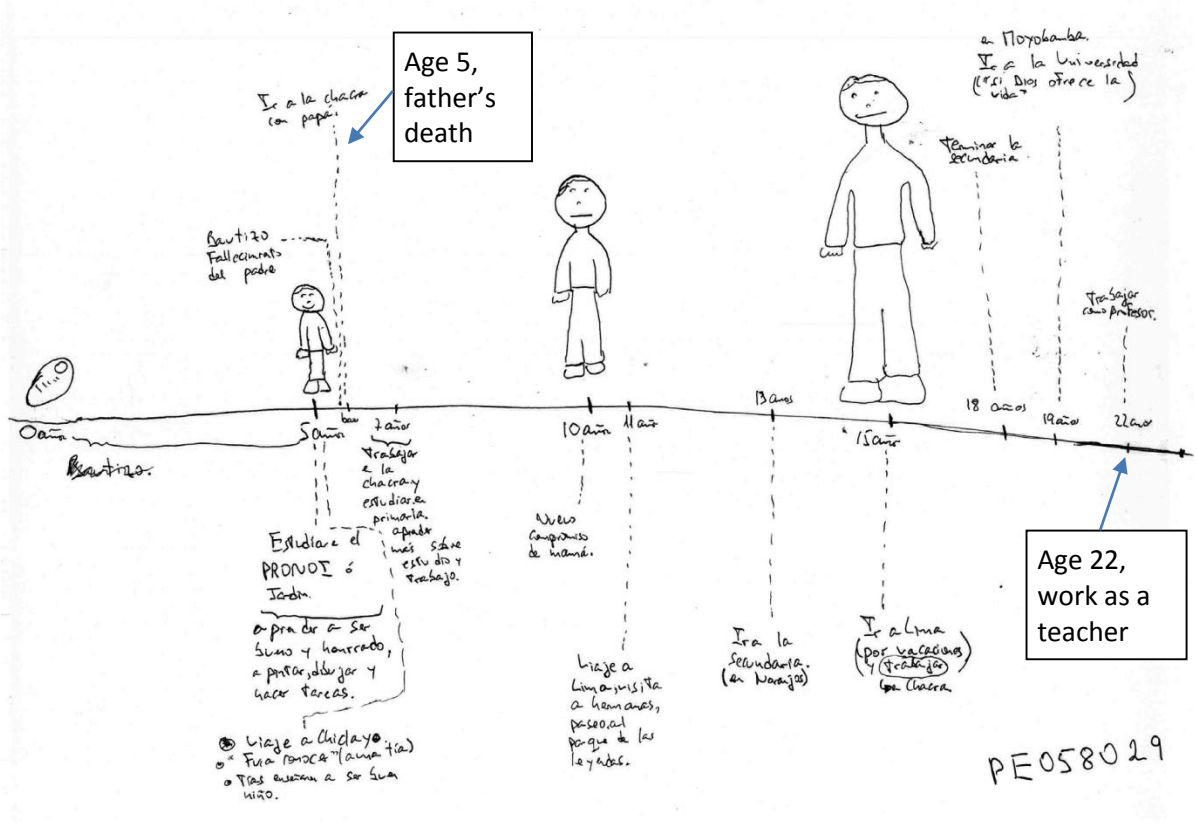
- Diverse life course perspectives are drawn from different academic disciplines employing a variety of concepts and analytic tools, but collectively emphasizing the importance of systemic frameworks, which are also dynamic in response to economic and social change.
- Life course analyses using cohort approaches bring a number of advantages of value to social policy interventions:
    - Linking earlier causes and later consequences
    - Identifying the timing of when circumstances and events matter most, and the extent of their reversibility
    - Identifying the ways children's developmental transitions and trajectories are embedded in changing household, institutional, community and macro- economic processes.
- Examining what shapes children's developmental trajectories and transitions identifies the role of multiple factors in shaping children's experiences and well-being as well as questions about the significance of critical periods, gateways, reversibility, etc.
- Recognising the ways trajectories are shaped differently by early circumstances contributes understanding about the intergenerational transmission of poverty.

2. Children's developmental trajectories

When he was 12 years old, interviewers asked Nicholas[2] to draw a timeline of his life. Nicholas is growing up in rural Peru. On the left side of Figure 2, he is a baby; on the right side he has achieved his future ambition to be a teacher. The points in between identify important happenings in his life; for example, when Nicholas was 5 years old his father died, which meant that the family lost both the father and the family business. The timeline illustrates Nicholas' awareness of the subsequent importance to remain in school, despite the undermining effects of household poverty, to learn and achieve his ambition.

[2] The names of this child and others have been changed to protect anonymity.

Figure 2: Nicholas' story



Source: Crivello and Boyden, 2011, p.8

This first section considers children's trajectories on core developmental dimensions: physical development and cognitive and psychosocial well-being (see Dornan and Boyden, 2011, Figure 1). We also draw attention to some of the interconnections and interdependencies between domains of development that are all too often studied in isolation one from the other.

Physical development through early childhood

Under-nutrition is one of the most widespread and most serious threats to children's healthy development and well-being. UNICEF attributes one third of under-five child deaths to under-nutrition (2013, p. iii). For those children who survive, under-nutrition has widespread lasting effects on their development (see Grantham-McGregor et al., 2007).

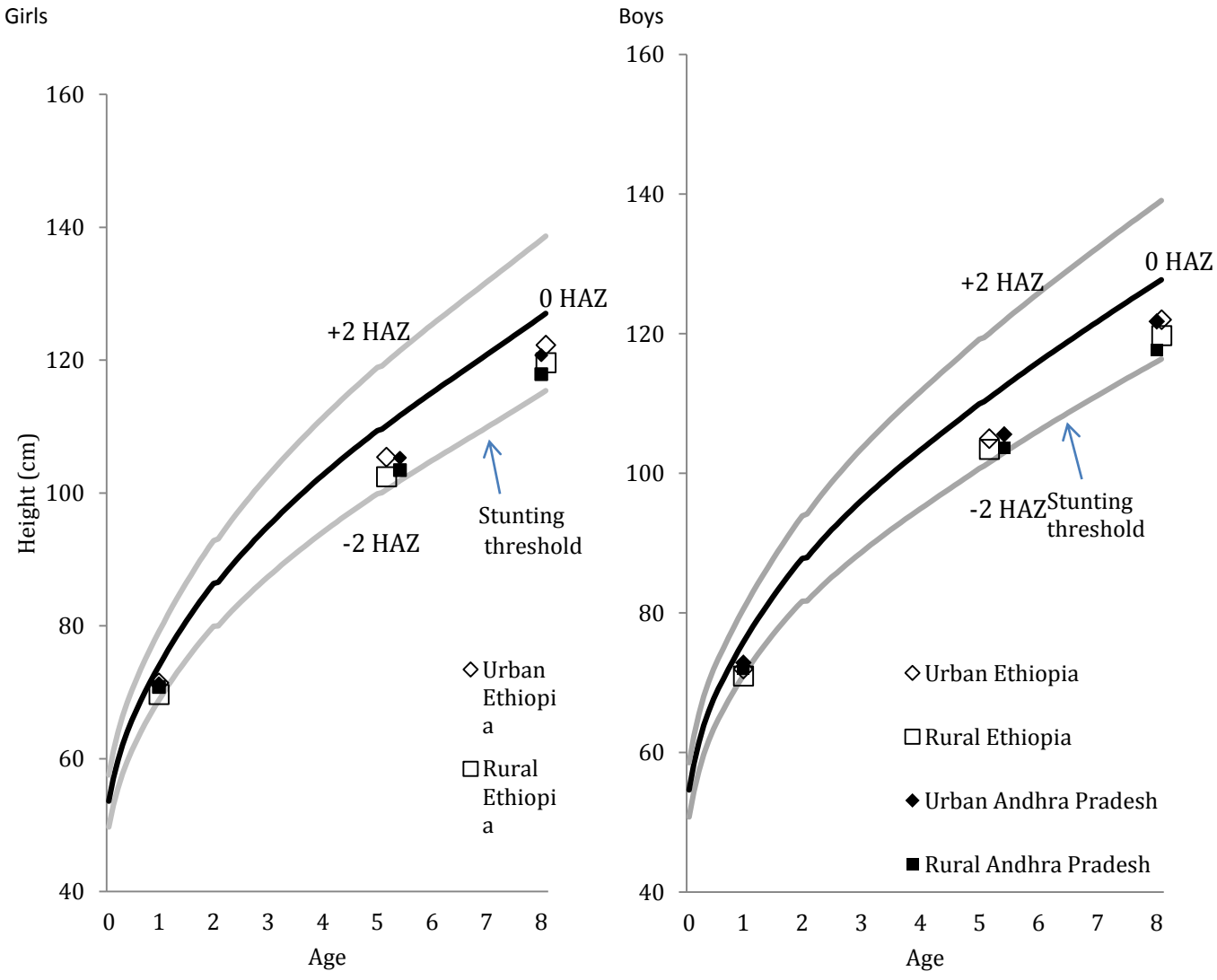
The Young Lives study collects anthropometric data, notably children's height and weight. Most of the analysis uses height ('stunting'[3]) as a proxy indicator for chronic under-nutrition. Analysis of children's height shows that large numbers of Young Lives children are much shorter than WHO growth norms.[4] When children in the Younger Cohort were then aged 8, levels of stunting varied between 20 per cent of the sample (Vietnam, see

[3] Stunting provides a measure of chronic under-nutrition, defined as -2 standard deviations ('height for age scores'), below the WHO growth norm.
4 WHO growth standards for 0–5 and 5–19 year olds from http://www.who.int/childgrowth/standards/en/ and http://www.who.int/childgrowth/standards/height_for_age/en/index.html

Duc et al., 2011, p.37) and 29 per cent (Andhra Pradesh, see Galab et al., 2011, p.51) highlighting stunting as a major issue across all four countries, and with linkages consistently found between wealth levels and anthropometric indicators (Petrou and Kupek, 2010).

Figure 3 plots WHO growth norms for girls and boys, with an expected range between the upper and lower bounds set at two standard deviations above and below the norm. The WHO growth norms allow individual height to be standardised for age (converted into Height for Age Z-scores, HAZ), 0 is the growth norm, and -2 (two standard deviations below the norm) is the stunting definition. Since HAZ controls for child age, changes in HAZ with age represent changes in the trajectory of height gain. The chart plots real height (in centimetres) for girls and boys (separated by urban and rural location) in Ethiopia and Andhra Pradesh against the WHO growth norm; in each group average height is below the expected norm.

Figure 3: Height of Young Lives children and WHO growth norms (Ethiopia & Andhra Pradesh)

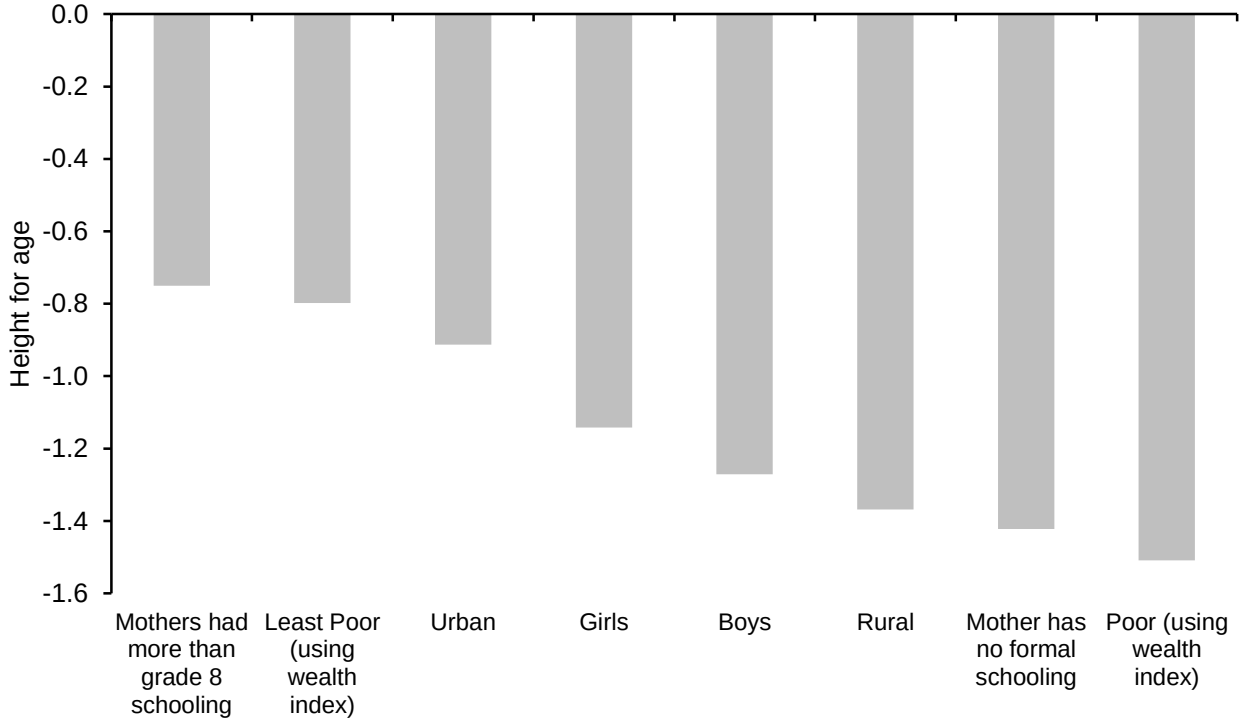


Note: the chart reproduces WHO growth norms and plots (merging growth standards for 0-5 and 5-19 age groups). Young Lives child data are plotted at the average age point for the sample (which varies slightly between countries).

Evidence from other Young Lives countries is similar, with average height of Young Lives children consistently below -1 height-for-age z-score at age points 1, 5, and 8. In Andhra Pradesh, Peru, and Vietnam average height-for-age scores worsen between the ages of 1 and 5 (Ethiopian children had the lowest initial HAZ, a score which actually improved slightly between 1 and 5) and then in all countries between 5 and 8 years HAZ improves slightly on average (see Lundeen et al. 2013, Table 2). As we shall see, age-specific patterns mask changing dynamics through the life course, highlighting the limitations of relying on cross sectional data to study height change.

The differences between children in rural and urban areas are illustrative of wide variations in growth trajectories in the Young Lives sample. Such differences are common across the Young Lives countries, and widen once other factors are taken into account. In Peru, for instance, at age 8 the risk of a poor child within urban areas being stunted was four times greater than the risk of one of the least-poor children in urban areas (Woodhead et al., 2013a, Figure 1). Figure 4 illustrates this with data for Ethiopia. In each of the examples average HAZ is below zero, but those with the highest levels of maternal education, those in the least-poor households, and those in urban areas had the best HAZ; the poorest children, those with lower levels of maternal education, and those living in rural areas had the worst height-for-age scores.

Figure 4: Children's circumstances at 1 year old and average height for age at 8 years old (Ethiopia)



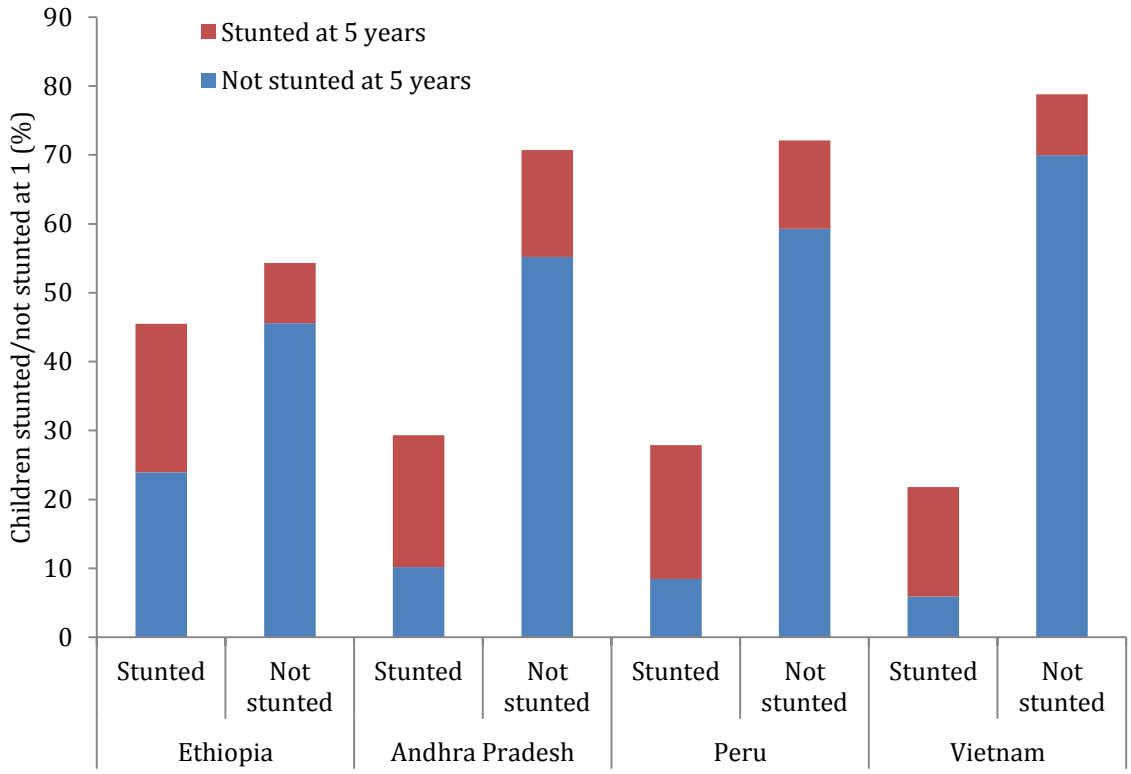
Note: Indicators of children's circumstances are based on data collected at Survey Round 1, in 2002 when children were one year old, with exception of maternal education levels, from Survey Round 2 in 2006. Poor/ least poor represent the wealthiest and poorest quintiles, in terms of a wealth index (which includes housing conditions, service access and ownership of consumer durables).

Figure 4 draws attention to background circumstances associated with stunting. Such links between early background, undernutrition and stunting are well recognized. But what such figures do not convey is the extent to which trajectories for children's height are dynamic, with some children improving and others worsening their status in relation to growth norms. Figure 5 uses data for each country, first to show what percentage of children were measured as stunted or not stunted at initial observation at around one year old (the height of the bars), and then to show whether those children were either stunted or not stunted at the second point of observation (the division within the bars). Between the ages of 1 year and 5 years the following changes are identified:

- At the age of 1 between half (Ethiopia) and one in five (Vietnam) children were stunted. Of those children who were initially stunted, between half (Ethiopia) and a quarter (Vietnam) were no longer measured as stunted by the age of 5.
- Of children not measured as stunted initially, by the age of 5 between one in ten (Vietnam) and one in five (Andhra Pradesh) had become stunted.

The instabilities of growth trajectories were also observed between the ages of 5 and 8: of children who were stunted at 5, between half (Ethiopia) and 30 per cent (Andhra Pradesh) were not recorded as stunted at the age of 8, showing that although the status change (and resilience) was lower at older ages, it was still considerable. Analysis for older age groups (combining the country samples) also shows instability, with about a third of older cohort children stunted at age 8 but not identified as stunted by age 15 (Fink and Rockers, 2014, p3), though these results may be influenced by puberty growth spurts (and if these vary by social groups might affect the apparent volatility against growth norms).

Figure 5: Percentage of children stunted at 1 year old, by whether or not they remain stunted at 5 years



Source: Lundeen et al., 2013, p.5, Table 3

The instabilities in height trajectories represented by Figure 5 can be considerable. Crookston et al. (2013, p.2) examine the size of change between 1 and 8 years in HAZ scores. Given that 1 HAZ is equivalent to a standard deviation[5] in expected height variation, for those who recover and falter these are large (see also Figure 3 which marks real height and standard deviation ranges):

- Never stunted: a slight reduction of between -0.08 (Ethiopia) and -0.03 (Peru)
- Persistently stunted: a slight improvement of between 0.15 (Vietnam) to 0.83 (Ethiopia)
- Physically recovered: an average gain of from 1.1 (Vietnam) to 1.9 (Ethiopia)
- Faltered: an average loss of 1.5 (Ethiopia) to 0.9 (Peru).

Although this evidence highlights the potential for later 'catch-up' (as well as later 'faltering') in height trajectories, there are differences in the chances of catch-up between social groups. A review of Young Lives evidence

[5] In a normally distributed sample, 95 per cent of the observations lie within two standard deviations of the average.

identifies household expenditure levels as a determinant both of height at 1 year and of physical recovery between 1 and 5 years (amongst samples in Andhra Pradesh, Peru and Vietnam). In Ethiopia, household expenditure was linked to physical recovery between 5 and 8 years (Schott et al., 2013). Similarly, Outes-Leon and Porter (2013) argue that recovery between 1 and 5 years is strongly marked by socio-economic differences (with less-poor children recovering, and poorer children more likely to remain stunted).

Schott et al. (2013) confirm that whilst early height is the most important single factor in determining later height; other risk factors play an important role in determining subsequent physical development to age 8. They report that amongst Young Lives children, height at 1 year was not able to explain between 71 per cent (Ethiopia) and 40 per cent (Vietnam) of the variation of height at 5 years. Height at 5 years left between 47 per cent (Ethiopia) and 26 per cent (Vietnam) of the variation in later height unexplained (Schott et al., 2013, p.282).

Examining what factors may have influenced recovery or catch-up from initial stunting, Schott et al (2013) identify higher household consumption levels were linked with height gain between 1 and 5 years in Ethiopia, Peru and Vietnam. Caregiver education was a determinant of improvements in Vietnam only, and paternal education a determinant of change in Ethiopia only. Greater maternal height was consistently predictive of children's height increase. Girls had lower rates of height change than boys in both Peru and Vietnam. Community wealth and living in an urban area were not shown to be significant. The presence of a hospital in the community was associated with greater height gain in Ethiopia and Andhra Pradesh. Further investigation revealed that the presence of hospitals was associated with a greater gain in height-for-age between age 1 and age 5 in rural areas than in urban areas.

Factors influencing height change between 5-8 years were more difficult to identify. Higher consumption levels were associated with stronger gains in Ethiopia, but not in the other countries. Caregiver-education levels were significant in Andhra Pradesh and Peru, although paternal education was not. Greater maternal height is predictive of greater height change in Ethiopia, Andhra Pradesh, and Peru. Girls had greater HAZ gain than boys in Ethiopia and Vietnam. The presence of a hospital in the community was associated with greater height gain between 5-8 years in Andhra Pradesh only, providing some confirmation of the continuing importance of this factor beyond earliest childhood. Also, community wealth and living in an urban area were not shown as associated with height change between 5 and 8 years, consistent with evidence for 1 to 5 years, as above (Schott et al., 2013).

Public policies are also likely to be important. Analysis for Ethiopia suggests a link between sanitation and increased chances of children physically recovering (Outes-Leon and Porter, 2013). Evidence from India examined

the effects of the midday meal (school feeding) scheme in Andhra Pradesh, highlighting that whilst drought in the recent period had damaging effects on children's height and weight, this was counteracted by receipt of the midday meal which acted as a safety net (Singh et al 2012).

Finally, in evaluating which children are most at long-term risk from initial stunting, it is worth noting that across the four countries the size of the association between household wealth and undernutrition indicators grew between age 1 and age 5 suggesting an accumulation of the effects of disadvantage on long-term undernutrition (Petrou and Kupek, 2010). Resilience and faltering occur in height development, and much of this resilience appears to be structured by household or community factors affecting the child. The potential for change in indicators of stunting represents a policy opportunity if interventions can support more recovery and less faltering. But whilst promoting physical growth is itself a worthwhile goal, two cautions ought to be born in mind. First, even if children recover physically, is this resilience associated with wider benefits to cognition and well-being?

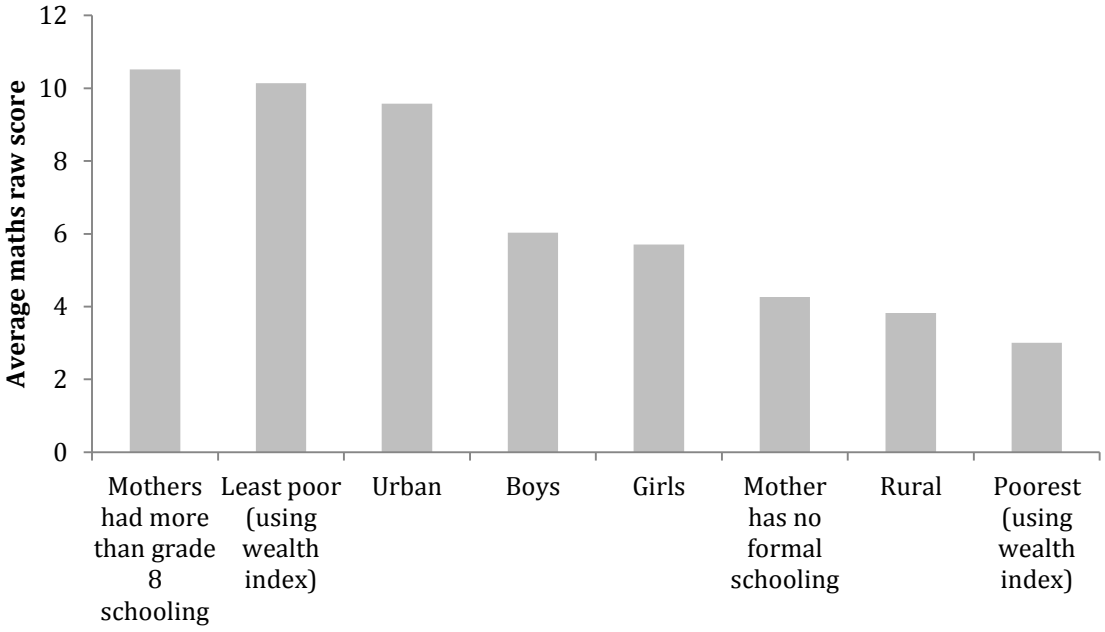
Evidence on this question is discussed below with some encouraging findings on cognition. Second, while policy interventions can build on encouraging evidence of at least partial reversibility of stunting for some children, the earlier discussion of the foetal origins hypothesis shows that the long-term effects of malnutrition can show up much later, and perhaps in unexpected ways. The critical importance of the very earliest period of life is a reminder that prevention remains a more cost-effective strategy than later remediation (Alderman and Walker, 2014). Ensuring adequate nutrition from infancy also respects every child's fundamental right to survival and development (Convention on the Rights of the Child, 1989, Article 6). Early investment is therefore a priority, but understanding what determines post infancy change may open up opportunities to secure early gains and support later recovery.

Learning trajectories through early childhood

As a preface to looking at learning trajectories amongst Young Lives children, it is important to note that overall learning and achievement levels are often quite low against international norms, and vary considerably between country samples. For example, children from the Ethiopian sample do least well in school, while children the sample in Vietnam do best. By the age of 8 (in 2009) about a quarter of the Ethiopian sample could read compared with 87 per cent of the sample in Vietnam (see Rolleston et al., 2013b, Table 5). Within these overall averages there are considerable disparities, which vary by wealth and urban and rural location. Also, differences between girls and boys during early childhood were small (Rolleston et al., 2013b, Table 5) but they widen at older age points, although not always favouring boys (Woodhead et al 2013a). The role of school in children's learning trajectories is also discussed in Section 4.

Figure 6 identifies the link between children's circumstances at 1 year old and their average maths scores at the age of 8 (on a test of 29 items covering addition, multiplication, subtraction and division, see Cueto and Leon, 2012, p.8). The average test scores for even the more advantaged groups are comparatively low, but within this low achievement there is considerable disparity between the groups. The similarity in the patterns in Figures 4 and 6 highlight the associations between different domains of children's development – it is often the same children who have low height for age scores and are doing poorly at maths. Related differences show up in spatial differences in performance between geographic areas (Rolleston and James, 2011, p.18; Dornan and Ogando Portela, 2014).

Figure 6: Children's circumstances at 1 year old and maths scores at 8 years old (Ethiopia)



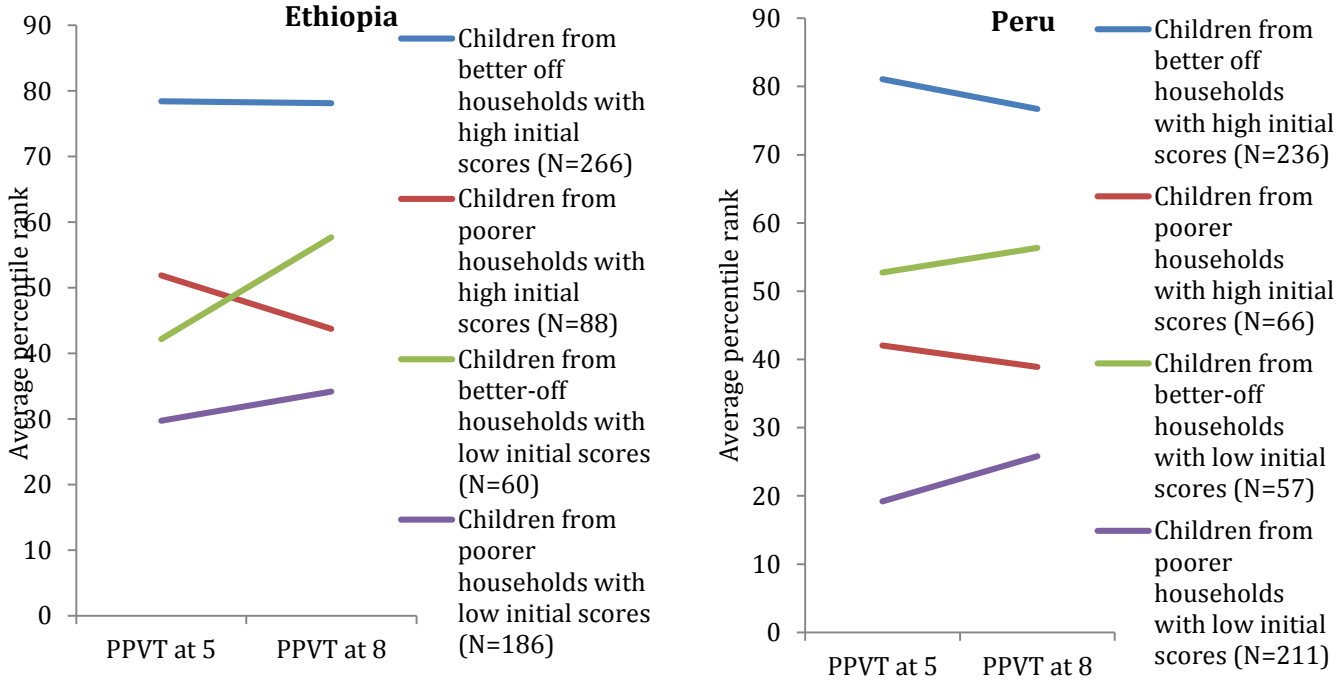
Next we turn to evidence on learning trajectories for Young Lives children at a later stage, based on test scores at 5 and 8 years old.[6] Figure 7 identifies groups that were high- and low- scoring at age 5, differentiated by their socio-economic circumstances, and then tracks their progress by age 8. Interpreting this data requires care, because at least some of the effect could be due to regression to the mean, though the analysis in Figure 7 is constructed to reduce this effect.[7] Patterns for Ethiopia and Peru are shown

6 For details of psychometric measures, see http://www.younglives.org.uk/files/technical-notes/YL-TN25_Cueto.pdf and:http://www.younglives.org.uk/files/technical-notes/psychometric-characteristics-of-cognitive-development-and-achievement-instruments-in-round-2-of-young-lives

7 So called regression to the mean is expected in panel test data. Children ranked as having the highest scores at the first point can only do the same or less well at a second test and vice versa for those with initially low scores resulting in some convergence. Care is needed since such effects may not only be due to children's learning level and they may occur differently for groups of children. If poorer children who appeared to do well at the first point did so because they made lucky guesses, later performance would fall off quickly. To reduce this risk, children are ranked for initial ability on one test (the CDA, a test of children's understanding of concepts of quantity) with progress measured on a second test (PPVT, a test of receptive vocabulary). Since it is unlikely that children guessed well on both tests this reduces, but does not eliminate, regression to the mean inherent in this type of analysis; see Jerrim and Vignoles, 2013 for discussion of approaches.

in Figure 7, but the pattern is similar for the other countries. Relatively few poorer children were categorized as doing well at the age of 5 (that is few score in the top quarter). In Ethiopia, for example, 266 of the least-poor children but only 88 of the poorest children obtained high test scores at age 5 – so least-poor children were three times more likely to be in this high scoring group than the poorest children. Second, even amongst initial high scorers in tests, poorer children were much less likely to maintain their position when re-tested at 8 years. A general pattern emerges of these poorer high scoring children losing their relative rank position to less-poor children, again suggesting an accumulation of disadvantage during the transition years around preschool and early primary grades. Note that the converse trend applies to the low scoring group, with the low scorers from poor households much less likely to improve their position by the age of 8, compared to low scoring, but more advantaged, children.

Figure 7: Change over time in receptive vocabulary among children from poorer and better-off households (rank position)



Note: high wealth is defined as household wealth in the top quarter of the distribution and vice versa for low wealth. Children assigned to ability groups based on the CDA test achievement at five years. High initial score is defined as in the top quarter; low initial score in bottom quarter of CDA results. The CDA tests children's understanding of concepts of quantity. The progress of these groups is based on PPVT test of receptive vocabulary at 5 and 8 years.

These findings draw attention to children's diverging trajectories during the preschool years and earliest grades of primary school. Effects linked to relative household poverty are very likely amplified by inequitable access to quality preschool in national systems where parents' ability to pay fees and other costs can advantage their children (Woodhead et al 2013b). By the age of 8 most children are enrolled in school, and school becomes a major transmission pathway shaping learning and achievement levels, with striking country differences in school effects on learning outcomes (see also Section 4). Between 5 and 8 years children in Vietnam tended to make most progress (Singh 2014); children in Ethiopia least, with Peru and Andhra Pradesh in between. From the age of 12 to 15 years, children in Vietnam and Peru made similar progress and this was faster than the progress made in Ethiopia and Andhra Pradesh (Rolleston et al., 2013b). The impact of wealth levels on progress and achievement also varied between countries. Achievement gaps for maths between poor and less poor groups were smallest in Vietnam, where poorer children improved their maths performance between 12 and 15 years whilst children from poorer households in Andhra Pradesh and Ethiopia made little progress, despite the majority being enrolled (Rolleston et al., 2013b, p.13).

Within Young Lives samples, the association between gender and early school achievement was comparatively small, but grew in significance during middle childhood, though not always favouring boys (Dercon and Singh, 2011, pp.7–8, Tables 1A–1C). Gaps between boys and girls, particularly at younger ages, are smaller than between children from different socio-economic backgrounds. For example, whilst there was little if any difference at age 8 in maths scores between boys and girls in Andhra Pradesh, the gap between higher and lower wealth households was considerable (Woodhead, et al 2013a, p24). Between the ages of 12 and 15 years, the gender-based gaps grew, becoming pronounced and pro-boy in Ethiopia and Andhra Pradesh; and generally pro-girl in Vietnam (Dercon and Singh, 2011, pp7-8). In these respects, adolescence is a the key age phase where gender-based differences widen.

Linking domains of children's development across the early life course

So far children's trajectories have been considered in terms of single domains of development (based on indicators measuring physical development and cognitive skills). There are striking similarities in the factors associated with children's diverging pathways for both domains, and in many ways the distinction is artificial since nutrition strongly impacts on cognition, as well as on physical growth and other domains of development. These linkages have policy and programming implications. The development of vertical policy sectors (education, health, child protection, etc.), while administratively efficient, suffers the risk of narrow sectoral policy and programming, when increasing attention is being given to the virtues of an integrated perspective on development (Britto et al 2014). Cohort data offer two particular insights relevant to these debates: many of

the differences in children's well-being have a common root, and so, by extension, it is often the same children who experience multiple disadvantages; and domains of children's development interact as children develop: better health supports learning; better psychosocial well-being supports learning. Sectoral problems have multi-sector solutions.

Table 1 summarises these links within Young Lives data, identifying determinants of later height, cognition, and psychosocial development. Some of the cross-sectional associations between, say, learning and height will be due to both being affected by a third factor (such as malnutrition or poverty), and so Table 1 shows associations after having accounted for a range of household/community background as well as earlier development indicators to show the extent to which earlier domains had independent effects on later outcomes. Consistent with the previous sub-sections of the paper, the strongest links are found between early height and later height; and between earlier cognition (measured with test scores) and later cognitive skills. Earlier psychosocial development was only associated with later psychosocial development in one country.

There are also interactions between domains. Greater height at the age of 8 was associated with higher cognitive achievement at the age of 12 years in two out of four countries; and greater height at 12 was associated with higher cognitive achievement in 3 countries. Several studies draw similar conclusions, with greater height at 1 associated with higher cognitive achievement at 5 (Duc, 2011; Sanchez, 2009); and with height at 8 linked with school-grade progression in Ethiopia by 12 years (Dercon, 2008). Outes-Leon et al. (considering Peruvian children aged around 5 years old) found that one standard deviation increase in height-for-age score was associated with around one fifth of a standard deviation of improved vocabulary scores (2011, p.26). Analysis for Andhra Pradesh suggests that between a quarter (boys) and half (girls) of the achievement test score difference between marginalised caste and ethnic groups and more advantaged social groups resulted from the under-nutrition of the disadvantaged groups (Lopez Boo and Canon, 2013, p.4).

Table 1 also shows height at 8 was associated with psychosocial development by 12 years in two out of four countries (found also by Dercon and Sanchez, 2013 pooling data from the four countries) and that cognitive skills at the age of 8 were associated with psychosocial development at the age of 12 years in three out of four countries (a finding echoed by Helmers and Patnam, 2011 for Andhra Pradesh). The Table also finds psychosocial development at 12 years was associated with cognitive test scores at 15 years in two out of four countries (also found for Peru by Outes-Leon et al, 2010).

Table 1: Interactions amongst developmental domains

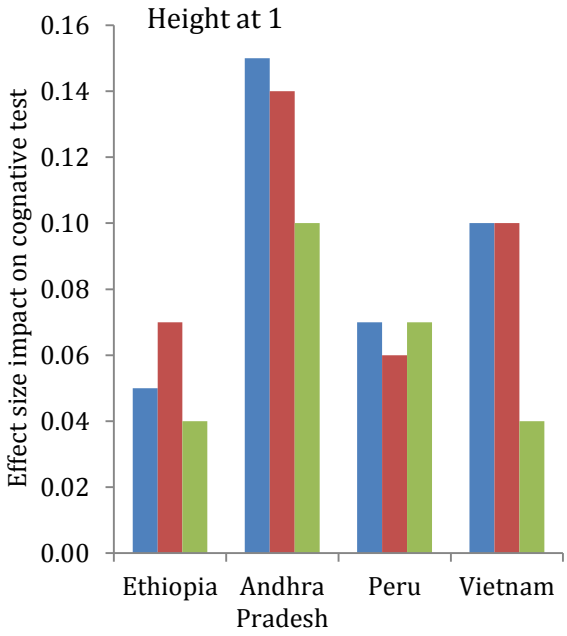
	Height	Cognitive skills	Psychosocial development
At 12 years			
Height at 8	Predicts later height in four countries	Predicts later learning in two countries	Predicts later psychosocial development in two countries
Cognitive skills at 8	Do not predict later height	Predict later learning in four countries	Predict later psychosocial development in three countries
At 15 years			
Height at 12	Predicts later height in four countries	Predicts later learning in three countries	Does not predict later psychosocial development
Cognitive skills at 12	Predict later height in one country only	Predict learning in four countries	Predict later psychosocial development in two countries
Psychosocial development at 12	Does not predict later height	Predicts learning in two countries	Predicts later psychosocial development in one county only

Source: Sanchez, 2013, p.22, Table 9.
Note: All results quoted are from multivariate regression analysis and are significant at the 90 per cent confidence interval or higher. The paper uses the term 'non-cognitive' for what is termed 'psychosocial' in Table 1. The paper uses factor analysis of scales to produce cognitive skill and psychosocial development measures (the measures used vary by child age since age appropriate tests were used). For cognition these include vocabulary and maths. For psychosocial development, these include data on self esteem, self efficacy and self respect. See Sanchez, 2013 for full detail.

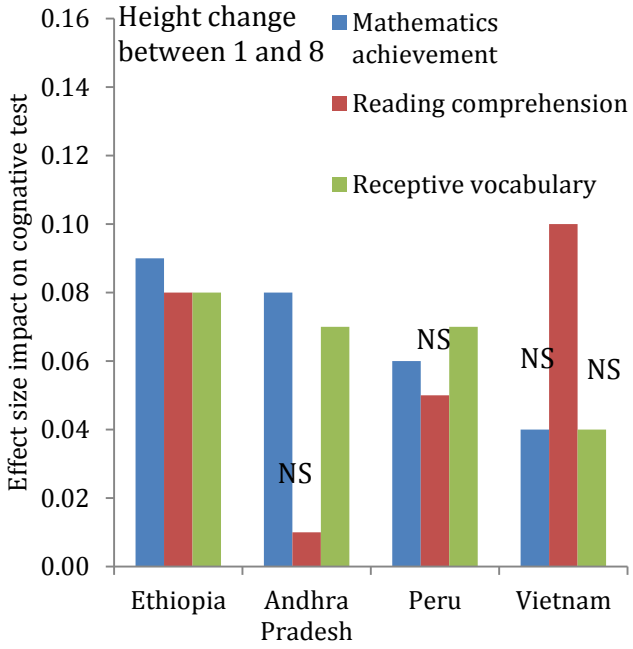
In estimating the size of some of these relationships, Figure 8 reports modelled effects for children's scores on cognitive measures by age 8, attributable to early height (at 1 year old), and to height change between 1 and 8 years that was not itself predicted by height at age 1. Results control for child, household, and community factors. In these models, height at 1 year was found to be consistently predictive of test scores at 8 years. In addition to early height, height change between 1 and 8 was in most cases associated with achievement levels at age 8. In many cases the size of the effect on maths scores linked with early height is similar to that linked with subsequent height change.

Figure 8: Early height and later height change as determinants of test scores for maths, reading, and receptive vocabulary at age 8

Height at 1



Height change between 1 and 8



Source: Crookston et al. 2013, Table 4.
Note : Results are significant at P<0.05 or higher, unless marked with NS (not significant). Results are from regression analysis and identify the independent effect associated with an additional standard deviation of either height at 1 (left pane) or height change 1–8 (right pane). Controls take account of a range of child, parental/household, and community characteristics. Height change between 1 and 8 is the proportion of height change which is not predicted by height at age 1.

A number of possible explanations can be offered for how height gain relates to cognitive test scores. First the same underlying factor that improved height gain might have simultaneously improved cognition, and so height or height gain is a proxy for other factors, notably undernutrition. Second, stunting might affect how children experience key transitions in their lives, notably how they are treated within school. Stunting is linked with later school entrance in Ethiopia and other countries (Frost and Rolleston, 2013, p.8; Woodhead et al, 2009, p.22; Orkin, 2011, p.10). Later enrolment by stunted children might be an indicator of perceived maturity, or of access issues for the poorest families. But school admission practices may also be partly responsible. For example, in the absence of universal birth registration in Ethiopia, teachers traditionally used a simple indicator of physical maturity (touching an ear by stretching an arm over the head) to assess school-readiness (Woodhead et al 2009, p.22). Finally, since stunting is related to poorer health (Dewey and Begum, 2011) this could also lead to lower attendance rates or learning.

Similarly, linkages both between earlier cognitive test scores and later psychosocial development could quite plausibly relate to the central role that the school plays in many children's lives (see Section 4), where continued attendance and success at school has a strong social value. Other analysis suggests that feelings of shame at 12 (a key element of psychosocial well-being, and often associated with poverty) were linked with learning levels at 15 years (Dornan and Ogando Portela, forthcoming), highlighting the role of how children feel about themselves and how they are treated in their engagement and learning at school. Such interdependencies are suggestive of both vicious and virtuous cycles of child development, where physical development supports better cognitive achievement, which in turn affects psychosocial indicators. In practice, the interactions amongst physical, cognitive and psychosocial domains are very likely even more complex than it is possible to model through analysis of Young Lives data set.

In summary:

- Early circumstances are critically important to later development across domains of children's development. Physical development, achievement levels, and psychosocial well-being relate closely to early and on-going household disadvantages.
- Whilst early circumstances matter considerably, they are not all of what is important for children's subsequent development: household, and community circumstances, including access to school and other services matter also in assuring positive developmental trajectories.
- Children's development is multi-dimensional: nutritional status is predictive of both later learning and psychosocial well-being. Cognitive development is supportive of psychosocial development; and psychosocial development is itself supportive of later learning and achievement.
- Prevention via early intervention remains the best strategy. But evidence of physical or cognitive 'resilience' also has important potential consequences for policy and merits further investigation as to whether interventions can improve the chances of children recovering. If effective policy can support recovery for disadvantaged children, this is an important contribution to breaking poverty transmission. This area is under further investigation.

3. Changing household circumstances as contexts for development

Chandani is a young girl growing up in Andhra Pradesh. Her family already had debts, when Chandani and her sister were born, and now there was both an increase in costs and their mother was not able to work while she cared for the children. It was household circumstances, the second layer in Figure 1, which framed Chandani's early life, impacting directly on her development as well as serving as a filter for more indirect effects from changing external circumstances, risks or policies (Vennam and Andharia, 2012, pp.7–8).

In this section we review Young Lives evidence on key household variables as these alter young children's experiences of growing up, including poverty, family size, health of family members and opportunities to access education. These variables have the potential to affect children's opportunities, and the capacity of households to promote their well-being. We emphasize that these are dynamic processes. As children are developing through their life course, households are themselves at particular phases in the 'family life cycle'. We offer evidence that households with youngest children have considerable needs and may be at the least well-off phase of the family life cycle. Finally, we review evidence on the ways multiple and enduring risk factors can increase household vulnerability, which in turn impacts children's development.

Family circumstances and impacts on children

Family size is commonly found to be linked with children's experiences of education. In Young Lives data there is evidence that children in larger families are more likely to miss school, and to leave school earlier. Evidence from Vietnam identifies larger family size as a determinant of leaving school earlier (Dung, 2013, p.15). Ethiopian evidence shows how family size might affect girls and boys differently: girls with no younger siblings missed on average 10 school days, while those with five siblings missed an average of 21 days, with absence increasing with the number of younger siblings (Frost and Rolleston, 2013, p.14). Boys with younger siblings also missed more school, but the effects were less pronounced.

Separate analysis for Ethiopia describes the links between household size and children's time allocation, again finding the pressure on girls to care for younger siblings being particularly great (Heissler and Porter, 2013, pp.12–13). This is all the more the case where a parent is absent, or ill, or deceased. Whilst work roles tend to be gendered (girls doing more domestic work and boys doing more work, such as farming, outside the home), detailed analysis suggests that this is not always the case, with both birth order and the presence of other siblings also influencing who does what work (ibid., p.16). Who does what work will be in part dependent on household

composition. Being a girl with many younger siblings is likely to result in particular pressures to work.

The health of family members has important implications for children. Family ill-health (reducing incomes and creating costs) is a driver of households becoming poorer (Krishna, 2007, p.1952; Shepherd et al, 2014, p.60; in Young Lives studies, Morrow et al, 2014, Vennam and Andharia 2012, p.16; Camfield and Tafere, 2009, p.11). In Ethiopia in 2006, 31 per cent of households reported that a household member had experienced ill-health at some point during the past four years (Orkin, 2011, p.26). In the same country by the age of 15 years one in four of the older cohort of children had experienced the death of one or more parent (Himaz, 2013, p.3). Qualitative research in Ethiopia suggesting that whilst adults often saw illness as routine, children reported ill health within the family as a major concern (Boyden, 2009, p.124).

This is an important point given how poorly disability – both adult and child – in developing countries is understood (for example see UNICEF, 2013). The death or absence of a mother was associated with increased work for children (Heissler and Porter, 2013, pp.12–13). Differences can be seen between children whose parent died whilst the child was aged 8 to 12 years (middle childhood) and those whose parent died whilst the child was aged between 12 and 15 years (adolescence). Unsurprisingly there was a negative impact on children's sense of optimism when a parent died during the child's middle childhood. The deaths of mothers at that point were also associated with reduced school enrolment, and with children doing more paid work by the age of 15 years (Himaz, 2013; also see Heissler and Porter, 2013). By contrast, the death of a mother during the child's adolescence produced less observable impacts on education, while the death of the father was associated with reductions in enrolment, test scores, and sense of agency (Himaz, 2013).

Education is highly prized as opening up new opportunities for children that were denied to previous generations; and with high aspirations from children and parents alike about schooling (Pells and Woodhead, 2014, p.42). Large investments in education are made frequently by family members. However where resources are restricted, this forces choices about investment levels for individual children, potentially triggering gender-based decision making. In Andhra Pradesh, for example, parents typically spend more on school related costs for boys than for girls, with the gap widening markedly towards the end of formal schooling (Pells, 2011b, p.21; Himaz, 2009).

The growth of the private school sector in recent years risks amplifying traditional gender preferences as high aspiring parents who are dissatisfied with government schools make hard choices about paying for school (Galab et al., 2013a). As the sector has expanded into rural areas and is also being accessed by less-advantaged households, so gender gaps between the

sectors have emerged, with boys more likely to be enrolled in private schools, and girls increasingly concentrated in government schools (Woodhead et al., 2013b). Such differences seem to originate in expectations of how investments will pay off later in life, with boys expected to use education to earn money for the family, and girls expected to marry, leaving the family. In these ways, household decision-making reinforces trajectories for boys and girls, as a consequence of financial constraints, social norms and assessment of the gain to the family from school choices (James and Woodhead 2014).

Household changes as children grow up

Children grow up in households which also experience change – with younger siblings born, older relatives dying, siblings moving out or new members moving in as young people marry. As the productivity of the household changes, so does the risk of poverty. Households with young children (and consequently high needs) are particularly likely to be poor – see for example Olinto et al (2013) for World Bank figures on extreme poverty by age group. An analysis of qualitative data by Vennam and Andharia (2012, p.16) identified the following factors as shaping households' experience of moving in and out of poverty: 'location', in terms of access to both markets and services; 'young households' with lower assets and higher needs; households with young children unable to contribute economically; households in debt; and households suffering economic, health-related, or other shocks.

Combining both Young Lives cohorts provides age specific data spanning 1 year olds to 15 year olds. Looking at average household size gives a sense of how families are changing as children grow up.[8] Average household size when the Young Lives child was 1 year old ranged from 4.9 people (Vietnam) to 5.7 people (Ethiopia and Peru). In Peru and Vietnam family size consistently fell from 1 year old onwards. In Andhra Pradesh family size was unchanged through early childhood (1-8 years), but fell after the child was 8 years. In Ethiopia family sizes increased between the age of 1 and 8 (younger cohort), and also grew for the older cohort up to 12 years before reducing. These changes represent a balance between a combination of household members leaving and older relatives dying – an effect counterbalanced at younger ages by the birth of siblings. Such compositional effects are also illustrative of likely changes in pressures on households – as illustrated by Chandani's family's experience – young families have young children, more established families may also have more adult workers within them.

A simple way to test the impact of household maturity on children is to consider how the wealth of households changed over time, specifically

[8] In each case there is also evidence that the younger cohort children were in slightly smaller households at the age of 8 than the older cohort (by between 0.1 of a household member in Andhra Pradesh, to 0.3 members in Peru and Vietnam).

between surveys in 2002 and 2009. If the wealth of older cohort households (generally at a more mature stage with older children) grows more than the younger cohort (generally at a more vulnerable phase in the family life cycle), this is evidence of a life cycle effect, with more mature households having greater economic productivity.

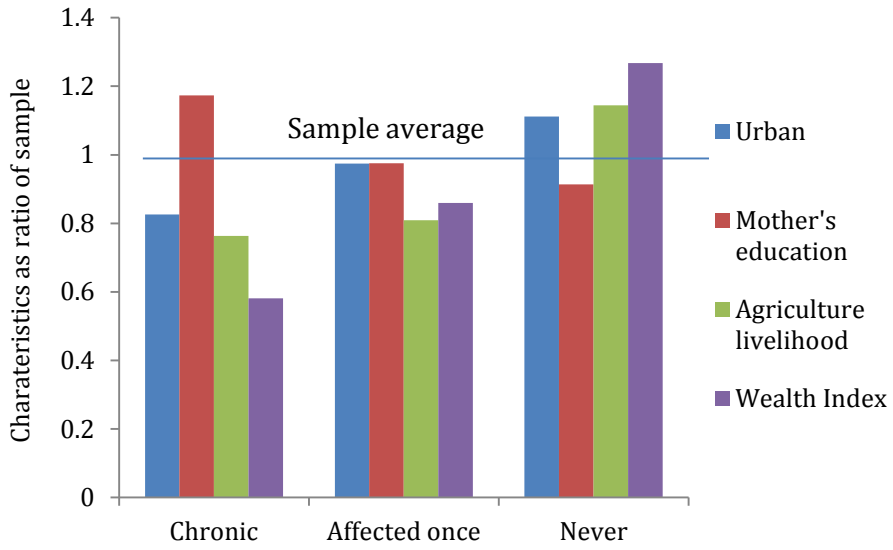
What is observed is that whilst the older cohort gains slightly more than the younger cohort, the larger wealth rise is common to both. So most of the improvement observed between 2002 and 2009 appears due to growing societal wealth, but with a small life-cycle element on top of this. Cueto et al. (2011, Tables 5.4–5.6) find older cohort households gained wealth slightly more rapidly than younger cohort households in Peru between 2002 and 2009, and in both Peru and Andhra Pradesh poverty exit was most common for older cohort households (Cueto et al, 2011; Galab et al 2011). Given that the older cohort were entering their later teenage period and increasingly leaving school when interviewed in 2009, their work capacity will be increasing, and so it is probable that these trends will diverge in later data collection.

Household experiences of multiple and enduring risks

Whilst some factors may change as households mature, other risks remain constant. One explanation for why some children do less well as they develop is that they are growing up in households which experience more external risk (food security, drought, economic pressures etc.) and that they lack the coping resources to withstand such risk. Where shocks are persistent then impacts may be magnified. Galab et al. show that about one-third of the households who were measured as poor in 2006 were still poor in 2009 in Andhra Pradesh (2011, pp.42–3). Similarly Duc et al. suggest that 30 per cent of Vietnamese households who were poor in 2006 were also poor in 2009 (2011, p.29, Table 4.1.2).[9] Figure 9 examines the question of which households are likely to experience persistent disadvantage, in this case using food insecurity reports for Ethiopia for 2006 and 2009 to identify which households experienced chronic (i.e. persistent) risk. Households that were chronically food-insecure were less likely to be urban, more likely to work in agriculture, and have lower wealth levels and lower maternal education levels. Higher levels of risk were, perhaps unsurprisingly, reported by more marginalised groups.

[9] Such changes are high because they are measured against absolute indicators at a time of generally rising living standards. Measuring relative poverty mobility is likely to show less mobility.

Figure 9: Chronic and episodic food-insecurity by household type (Ethiopia)



Source: Dornan, Ogando Portela, and Pells, 2014.
Note: group categories use 2009 data, food insecurity reporting relies on data reported in 2006 and 2009.

Figure 9 gives an insight into the reinforcing effect of risk on existing marginalisation. More marginalised groups – rural, poorer, agricultural, less educated –were more likely to be persistently exposed to adverse circumstances. Households in certain communities therefore tend to experience a high burden of shocks and risks (Woodhead et al., 2013a, p.13, Figure 2). Pells describes a typical sequence of coping reactions in the face of adverse events, from drawing on savings, to seeking support from relatives, then seeking informal credit from others, and then formal credit from formal institutions where it is available (2011a, p.23). And while households may value social protection where it exists, households also report reliance on informal sources of support (Vennam et al., 2010, p.14) with restrictions on who has access to some informal sources (Pells, 2011a).

Recurrent shocks therefore exhaust coping strategies, and in turn, undermine resilience. Extending social protection measures to buffer income or health shocks can enable more effective coping strategies. Chzhen (unpublished) used evidence from Vietnam and Andhra Pradesh to identify triggers to the receipt of formal and informal transfers. She notes that remittances provide a considerable proportion of some families' income but are seldom available to the poorest households (almost by definition, since households are poor in part as they have few and less diverse income sources). Formal social protection mechanisms were identified as progressive in impact.

Separate analysis from Vietnam examines the specific effect of crop and health shocks on whether children leave school, identifying different effects

on households. When households without borrowing constraints[10] experienced these shocks, no effect was seen on school retention. By contrast, poorer households who were constrained in their ability to raise resources were much more vulnerable. For these households, a crop shock increased the chance of children dropping out of school by 15.8 per cent. Interestingly, a crop shock also increased the likelihood of health shocks by 6.7 per cent (Dung, 2013, p.18). Extending household anti-poverty measures therefore can support better coping, reducing negative impacts on children.

At the same time, it cannot be assumed that social protection measures will function in a simple and direct way, because they intervene in a complex child/household/ community and economic system. As a specific example, analysis of early effects of the Productive Safety Net Programme in Ethiopia suggested that increased work requirements of parents enrolling in the social protection scheme resulted in some displacement of existing work towards children (Woldehanna, 2009).

In summary:

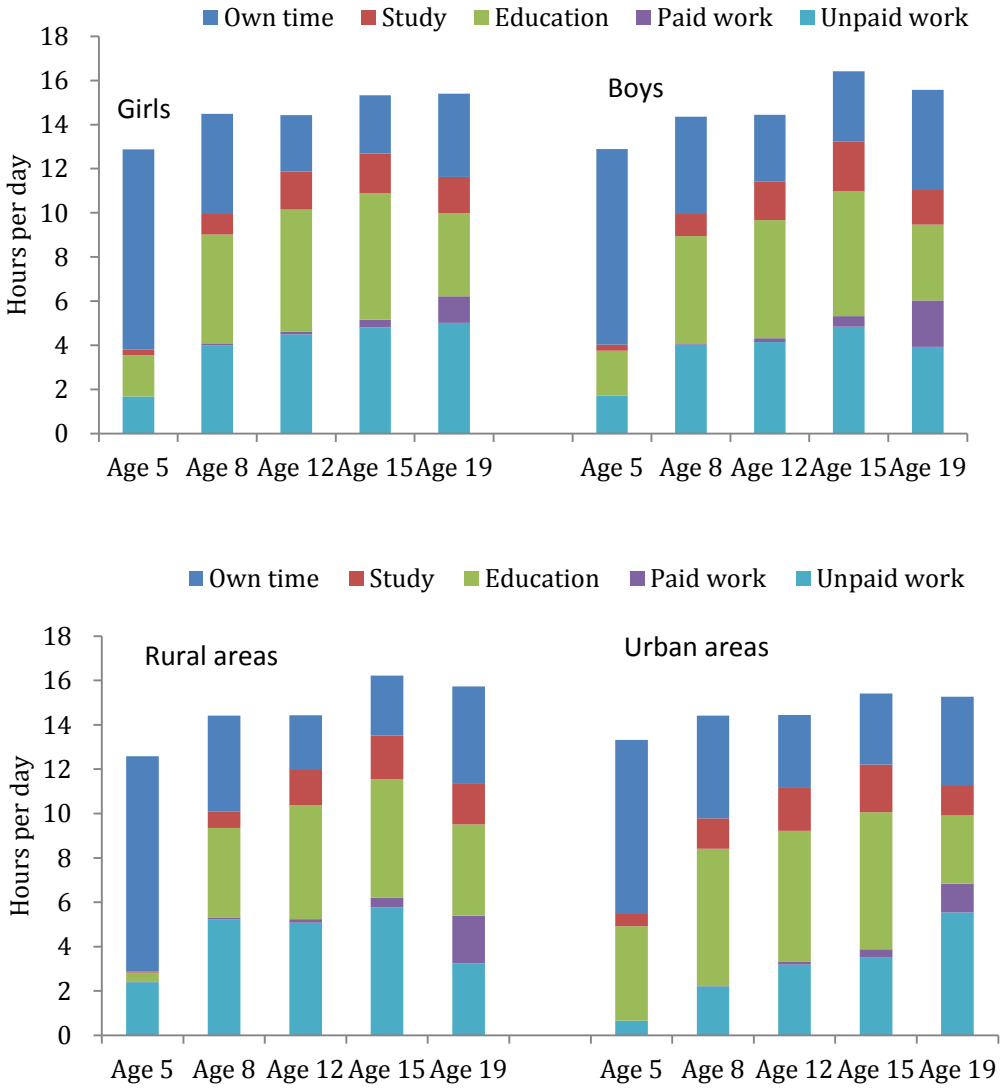
- Children grow up in households which are themselves changing. Younger households face particular needs for supporting younger children than longer-established households. Understanding this family life cycle can inform choices over extensions of social protection.
- On top of the economic circumstances of households, there are differences between the work needs of different households. Children, and particularly girls, with young siblings may well need to help care for them, a responsibility which may affect their schooling. The death or illness of one or both parents intensifies pressures and can reduce the likelihood that children remain in school.
- Poverty, risk and social norms constrain household choices. Where women face a disadvantaged situation in the later labour market, or where investments in women's education may be seen to be 'lost' to the birth household on marriage, it is unsurprising if lower investments are made in girls' schooling.
- There are systematic differences in risks faced by social groups, placing marginalised communities, poorer communities, and those in rural areas under particular pressures. Such differences are likely to be linked with accumulation of disadvantage during childhood. Effective anti-poverty policies able to reduce poverty and mitigate the impact of risk on households can boost resilience.

[10] Defined as being able to raise some funds quickly if needed.

4. The role of school and social context in children's development

This final section focuses on the third layer of Figure 1, namely how social context and institutions affect children's development. With the global growth in school enrolment, the impact of education on households and children features large in the experiences of Young Lives children. As well as being a key policy instrument aimed at boosting chances, Figure 10 shows for Ethiopia that children typically now spend a large proportion of their time at school throughout middle childhood and into adolescence, with important variations related to their gender, urban/rural location etc.

Figure 10: How children use their time by children's age (Ethiopia)



Note: the chart uses reported time-use data from multiple points and years (data for 5 years and 12 years was collected in 2006; data for 8 years and 15 years in 2009). Time-use data for younger children (5 and 8 years) is collected from the caregiver; data on older children (12 and 15 year) from the child themselves. Sleep is excluded, meaning totals do not sum to 24 hours.

For example urban children attended preschool in significant numbers, but there was virtually no preschool for rural children at the time Young Lives cohort were 5 years old (2006), although that situation is changing fast; (see also see Woldehanna et al, 2011, p.54; Orkin et al 2012). By 8 years old, work and care responsibilities take up a similar amount of the day for rural children, less so for urban children. As we will see, there are systematic variations in experiences of school, and interdependencies between school and concurrent needs to work and care.

Our focus in this section is especially on the role played by preschool and school in the intergenerational transmission of poverty. We examine how access and effectiveness of school systems affect inequities in children's learning and schooling trajectories. We also examine factors influencing transitions beyond the school, both as young people take on more responsibility and as activities become increasingly influenced, and sometimes constrained by, preparation for adulthood.

Impact of early childhood programmes on growing inequalities

First we consider early childhood. Numerous entry points for intervention (from before birth onwards) are now recognised by the research and policy community (see Lake and Chan, 2014; Woodhead 2014; Cunha and Heckman, 2010). Within Young Lives surveys, the main focus has been on preschool services as a key institution, increasingly accessed by young children, with important potential for supporting development, and altering life course trajectories (see, for example, Eming Young with Richardson, 2007) especially so for the poorest children (Murray, 2010; Murray, 2012). Many Young Lives children have attended some form of nursery, kindergarten or preschool, but with the poorest children least likely to benefit (echoing wider evidence, see UNESCO, 2014, p.49). Between the ages of 3 and 6 years, 84 per cent of children in Peru and 87 per cent in Andhra Pradesh had some experience of preschool education. In both Peru and India, established public systems exist, increasing access to services for many children – poorer children were most likely to be in government preschools; whilst less-poor children were more likely to be in private preschools (ibid., 2009, p.37; p.59).

Whilst public provision may ostensibly be 'free', hidden costs of participation may exist. For example in Peru parents report financial contributions to parents' associations, payments for school materials and lunches, and an expectation that parents would provide cooking or cleaning voluntary work (Ames et al. 2009, p.18). In Ethiopia no widespread public provision existed at the time our sample reached 6 years old, (2006) and attendance rates were much lower and limited to urban areas; although a national policy framework for Ethiopia (2010) now encourages development of the sector (see Orkin et al, 2012).

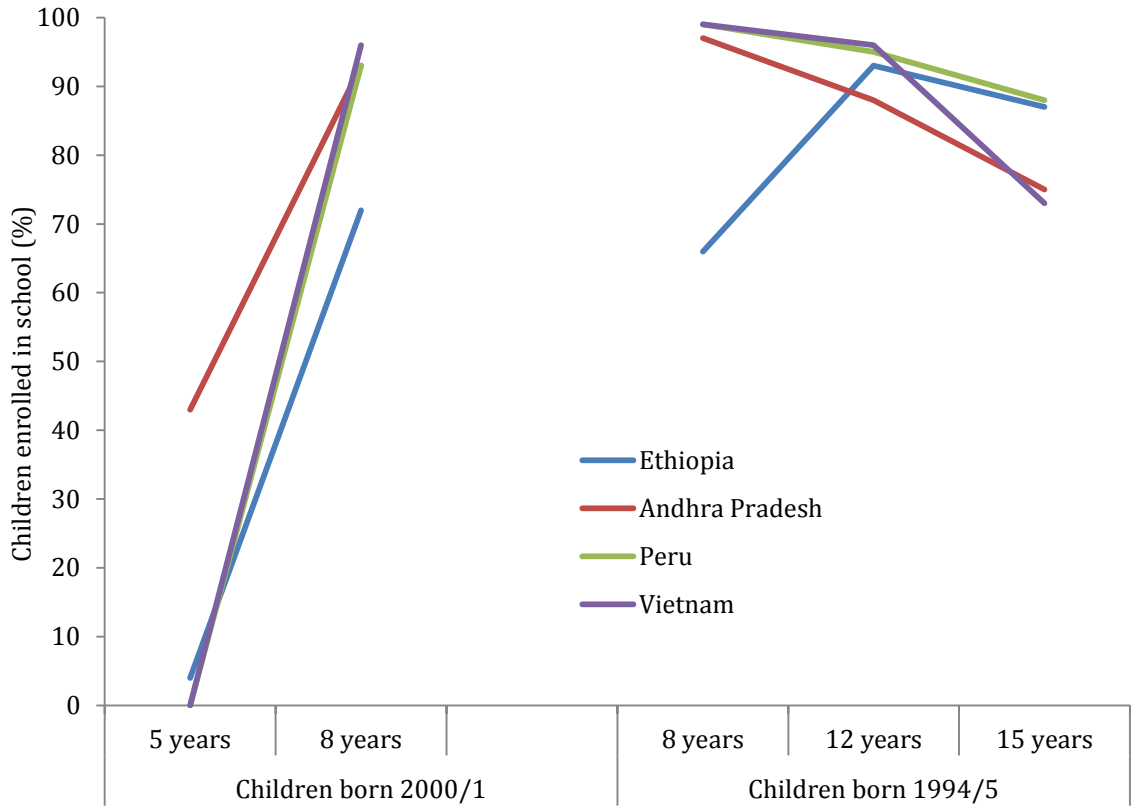
As well as barriers to access, children experience different types or quality of provision. Quality differences undermine the effectiveness of preschool as an anti-poverty strategy and may actually reinforce inequity for those already subject to social or economic disadvantage (Ames et al., 2010; Streuli et al., 2011 Streuli, 2012; Orkin et al., 2012). One of the challenges identified by Woodhead et al. (2009, p.42) is the link between preschool and primary school, and notably where the separation of institutions may lead some parents to view preschooling as an optional addition, rather than a foundation for primary schooling. Ames et al. (2009, p.16) similarly suggest that, while parents overall valued preschool, some identified newer preschool provision with 'play' and established primary schools with 'learning'. Considering experiences in Peru, Ames et al. also describe significant differences, contrasting the knowledgeable way in which better-educated parents described the role that they would play in preparing children for preschool with the equally committed, but less specific, way in which less-well educated parents spoke of sending children to school and giving them school materials (2009, pp.19–20). It is not hard to see how early disadvantages may be reinforced in terms of both access to services and what children gain from attending.

School access, quality and effectiveness for disadvantaged children

The expansion of primary schooling enrolment has been a major success in terms of delivering on MDG and EFA goals, but shifts the policy challenge from access to schooling, to school quality and effectiveness. The report of the High Level Panel on a replacement set of goals for the MDGs, for example, emphasizes both universal zero-based targets for core goals (such as all children leaving school able to meet minimum learning standards), together with greater disaggregation of which groups are experiencing change and a focus on learning indicators across the range of indicators (United Nations, 2013, see also the Open Working Group report, OWG, 2014).

Young Lives countries follow these wider global trends of increased school enrolment. In Young Lives data by the age of 8 in three countries and 12 for Ethiopia almost all Young Lives children were enrolled (see Figure 11). Enrolment rates increased between 5 and 8 years. With the exception of Ethiopia (when the highest enrolment peaks later), enrolment fell slightly by 12 years old and continued to fall by 15 years. Both cohorts are represented on the chart, with cohort differences at age 8 showing the effect of policy and social change over time (most markedly the increased enrolment of children in the Ethiopian sample). Ongoing policy reforms will no doubt continue to affect enrolment. In India, for example, the Right to Education Act, passed in 2009, mandates school enrolment between 6 and 14 years.

Figure 11: Enrolment in school by age (%, children born in 1994/5)



Source: Rolleston et al., 2013b, Table 2, p.6

Gender differences in enrolment vary between the countries. By age 15 boys were more likely than girls to be enrolled in school in Andhra Pradesh, but they were less likely to be enrolled in Ethiopia, Peru and Vietnam (see Dercon and Singh, 2011, Table 1a), a pattern which may likely to reflect the greater economic returns of young men working on the one hand, and social norms on the other. Rolling forward to 2013 (when the children born in 1994/95 had reached 19), between 45 per cent (Peru) and 59 per cent (Ethiopia) report still being in some form of education, often combining this with work (Dornan and Pells, 2014, p.13). For the younger cohort, aged 12 years in 2013, the enrolment rate was between 95 per cent (Ethiopia) and 99 per cent (Peru), rates equivalent or higher than the rate for the older cohort at the same age seven years earlier (the increase in Andhra Pradesh is particularly marked (Dornan and Pells, 2014, p.9).

Disaggregating experiences within social groups reveals wider differences. Considering this at 19 years shows that in Andhra Pradesh, being both poor and a young women was associated with a particularly low enrolment rate. By the same age in Ethiopia and Vietnam it was poor young men who were the least likely to be in education. In Peru by age 19 the poorest women were least likely to be in education, but the less-poor women were actually more likely to be enrolled than less-poor men (Dornan and Pells, 2014, p. 13). Gender disaggregation is therefore important, and reveals different

national stories, but greater differences are revealed by combining disaggregation with socio-economic status.

Enrolment, of course, does not equate to learning. At the most basic level, enrolled children may not attend. Poor rates of attendance are often due to children working (Pells and Woodhead, 2014, p.52; Morrow and Vennam, 2012, p.557; Singh and Sarkar, 2014, p11) and/or to poor child health (Orkin, 2011, p.11). And while work may undermine schooling, the extra income it provides may also be a coping strategy enabling children to remain in school (Boyden, 2009, Pells et al 2013). Prolonged absence from school is then also likely to affect key institutional transitions through the schooling system and may oblige children to repeat years, for example, in ways which reduce the chances of continued enrolment.

Estimating what influences cognitive achievement as children grow up, highlights early socio-economic disadvantage (at 8 years) was strongly associated with lower achievement levels and also that doing well/badly in cognitive tests earlier is associated with later learning levels (Rolleston and James, 2011, pp.27–30). Both points highlight the foundational importance of the early years for learning. Care is needed in analysing the role of the school in learning since schools with a more advantaged intake get better results which may have nothing to do with the action of the school. A large part of the reason why ethnic-minority children in Vietnam achieve less than their majority peers, for example, is that they face much more background disadvantage (Glewwe et al., 2012, p19). Similarly much of the effect of private school pupils outperforming those in Indian government schools disappears when the socio-economic background of children is taken into account (Singh, 2013, p.18).

Differences in facilities and children's experiences of learning are commonly seen among the Young Lives children, translating into different opportunities to learn. In Ethiopia 66 per cent of urban primary schools had water on the site, compared with 43 per cent of rural schools (Frost and Rolleston, 2013, p.16); in Andhra Pradesh urban private schools had 2.6 working computers per school, while rural government schools had almost none at all (Galab et al., 2013b, p.12). In Peru private schools in urban areas were five times more likely to have a library than public schools where Spanish was the language of the classroom (Guerrero et al., 2012 p.24).

Descriptive differences are suggestive of opportunities to learn, but don't prove impact. Analysis for Andhra Pradesh, for example, found that smaller class sizes, less teacher absenteeism, and teachers regularly checking workbooks and using textbooks were each associated with positive and significant effects on children's learning; infrastructure was not shown to have a significant impact (Singh, 2013, p.15, see also Singh and Sarkar, 2012). Taking account of pupil backgrounds in evaluating the progress made at school gives a method to identify the 'value added' by school. Doing so produces the simple policy message that some schools (and school

systems) make more of a difference to learning than others (Rolleston et al., 2013b, p.31). Isolating why this is the case can help to build a strong evidence base needed to inform school improvement programmes.

All too often there is a pattern of disadvantaged children arriving at school least prepared, accessing lower quality schools, attending less consistently, dropping out early and gaining least in terms of educational progress. More encouragingly, Young Lives evidence from Vietnam demonstrates the potential of schooling to reduce inequalities. Table 2 presents the absolute progress between the start and end of grade 5, (around age 10 years) using pre- and post-tests in maths and Vietnamese (benchmarked against the curriculum being taught). These figures show a significant gain in children's average learning level, but also a degree of catch-up among minority groups. Vietnam provides an important case study, since in comparison with the other Young Lives countries, Vietnamese children learn more from their schooling (Rolleston et al., 2013b, p.13, Singh, 2014).

Table 2: Learning gain in grade 5 by gender and ethnicity (Vietnam)

		Maths			Vietnamese		
		Oct-11	Apr-12	Gain	Oct-11	Apr-12	Gain
Average		500	540.1	40.1***	500	513.9	13.9***
Gender	Girl	503.1	540.7	37.6	514.6	528.2	13.6
	Boy	497.3	539.4	42.1	487.5	501.0	13.4
	Difference	5.7**	1.3	4.4*	27.0***	27.2***	0.2
Ethnicity	Kinh	509.6	546.1	36.6	511.7	518.3	6.6
	Ethnic Minority	434.0	497.9	63.9	420.2	483.3	63.1
	Difference	75.6***	48.1***	27.4***	91.5***	35.0***	56.5***

Source: Rolleston et al., 2013a, p.5. Note: *** significant at 1%

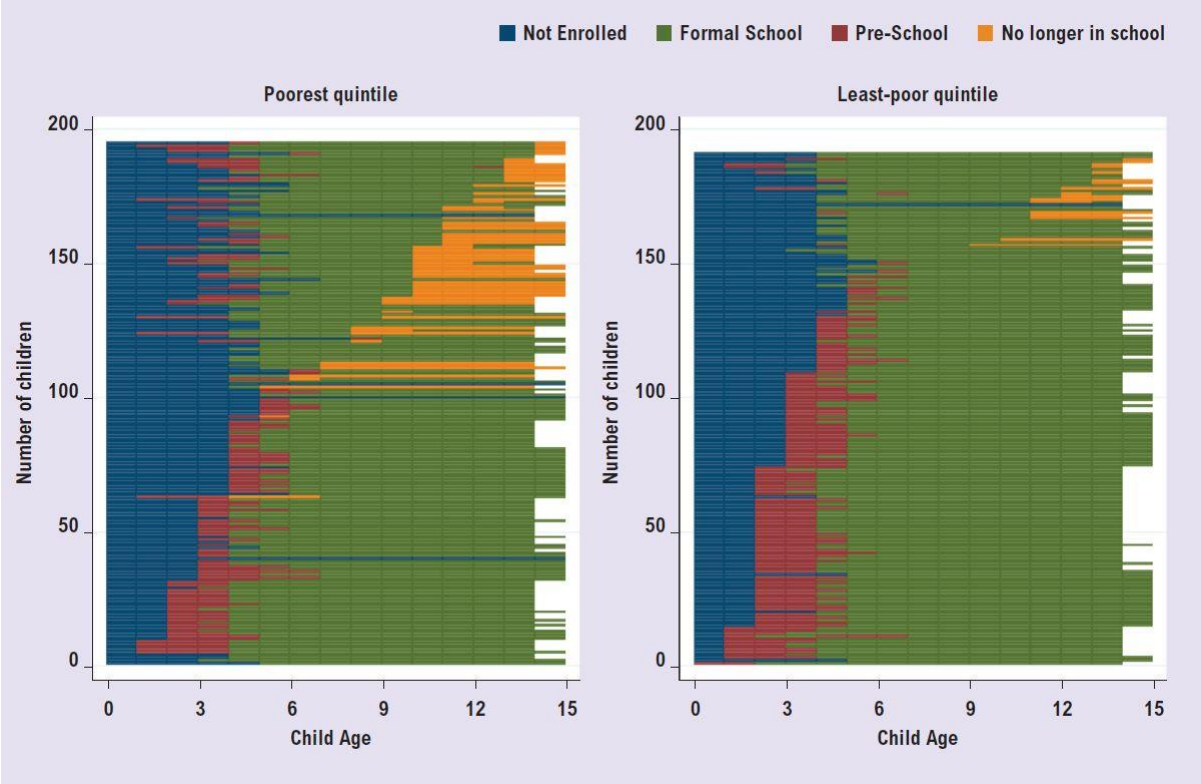
The same analysis identifies that while there is some evidence that disadvantaged pupils attended slightly lower-quality schools in general (measured in terms of how schools 'added value' to predicted learning), many of the schools with the highest value-added results actually served disadvantaged and minority pupils. Encouragingly, therefore, selection effects into less effective schools were limited. In identifying what might lie behind

such value-added differences, high-performing schools were found to have better facilities (including classrooms), more trained teachers, and head teachers less likely to originate from outside the area, and such schools were less likely to admit all students who applied (Rolleston et al., 2013a, p.37).

Diverging school trajectories

Differences in schooling trajectories accumulate over the preschool and school career with what happens in early childhood opening and closing gateways to different experiences of schooling later in childhood. Figure 12 examines enrolment trajectories in Andhra Pradesh. Each line represents a child, with enrolment status recorded at each age point. This sequence index plot provides a representation of diverse pathways into and out of school, with children who have left school early much less likely to have attended preschool. The range of children's trajectories are shown separately for the poorest and least poor children. A key message from Figure 12 is that having access to complete school history data provides much more powerful evidence on children's trajectories, capturing distinct life-course patterns of access to preschool, transition to primary school, through to leaving or dropping out of school.

Figure 12: Enrolment in schooling institutions by child age (Andhra Pradesh)

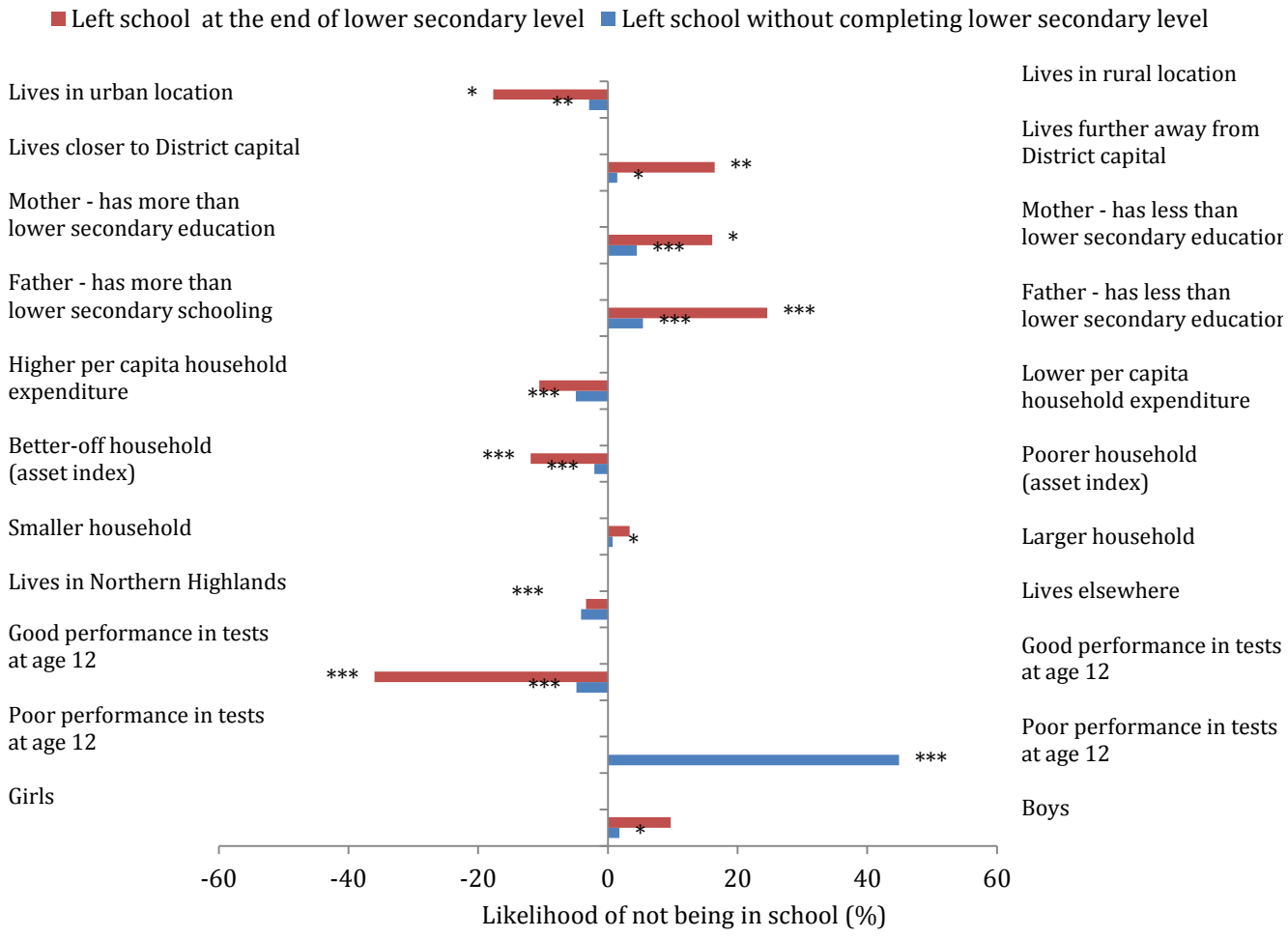


Source Woodhead et al, 2013, Figure 12

Just as differences in the duration of children's schooling accumulate between groups of children, so do achievement gaps (see Section 1), with

such differences likely to affect what children gain from school and when they leave. Performance in the grade 10 exam in Andhra Pradesh (taken at 15/16 years), provides just such an institutional gateway, affecting school exit and later opportunities: *"Ranadeep described how his friend Prahalad, who had also failed Grade 10 exams, said that 'in our fate it is written that we must only do agriculture* [be farmers]. *There is no way we can go to college'* (Morrow, 2013a, p.264). Similarly there are links between scoring poorly in cognitive tests and an increased risk of exiting school early. In Vietnam 48 per cent of those in the bottom quartile of maths scores at 12, had left school by 15 (Rolleston, 2014, p.140, Table 5). Figure 13 presents determinants of when children leave school, specifically identifying two groups: children who left school without completing lower secondary level education; and children who have left school at the end of lower secondary level education. Good performance in tests at age 12 is a determinant of still being in school at 15; poor performance in tests at age 12 a key risk factor substantially increasing the likelihood of not being in school at 15 (on top of the other controls, which include expenditure and parental education).

Figure 13. What determines whether children leave school by 15 (Vietnam)



See Duc and Tam, 2013 * significant at 5%; ** significant at 1%; *** significant at 0.1%. The chart reports the results of two regression analyses, predicting school exit at 15 year (having completed, or not completed lower secondary level schooling), rather than remaining enrolled in school.

Such evidence is consistent with school exit as both influenced by the 'push' of what schooling seems to deliver as well as by the 'pull' of the need to work. Achievement levels are not the only influence: the quality of the school environment and the ways children are treated is also important. Reports of bullying, violence, and sexual harassment occur commonly common across all four countries (for instance, Pells et al., forthcoming; Ames and Rojas, 2010; Morrow and Vennam, 2012, p.553; Hang and Tam, 2013, p.17). Comparatively simple matters such as the availability of separate toilets for girls and boys (Pells, 2012, p.565) or clean and safe toilets in Ethiopia (Cameron, 2009, p.9) have considerable potential impact on experiences of school, particularly for girls as they reach puberty. Examining why children say they left school suggests this had to do with experience of school, not only the need to work. For example whilst 21 per cent of boys who had left school in Andhra Pradesh report doing so to work, thirty per cent of boys reported a problem connected with the school (for example, not wanting to go) and 11 per cent had been banned (for prolonged absence or bad behaviour). Girls more commonly reported that leaving school had to do with paid and unpaid work including being needed at home (19 per cent) and needing to earn money (12 per cent) (Morrow, 2013b, p.91).

Social transitions in later childhood

As children grow older their experiences increasingly widen beyond the household and school (Ames, 2013; Tafere, 2013). As such, many of the transitions occurring during later childhood and towards adulthood are shaped by wider social norms and expectations of the later roles young people will play. Through middle and later childhood school remains central for many, but there are transitions beyond school, economic transitions towards livelihoods and preparation for social transitions into partnership and parenthood. Alongside the importance of learning, 'social reputations' become increasingly important and social as well as physical risk exerts an influence on choices.

As noted earlier, while early childhood is often identified as a critical period, adolescence is increasingly recognised as another window of opportunity for improving life chances (Diers, 2013). The global rise of education means that remaining enrolled in (and successful at) schooling is now a central marker of 'the good life' and of prospects for the future. Such views are shared by children and parents alike and are reflected across the Young Lives countries (see also Crivello, 2011, pp.402–6; Camfield, 2011, p.686; Morrow, 2013b, p.93). Pells noted very high aspirations for children (aged 8) to remain in school and go to university (2011b, p.12, Figure 4). In Ethiopia between 52 per cent (poorest) and 90 per cent (least poor) of parents reported an expectation their children (older cohort then aged 12) would go to university, with almost all expecting they complete secondary schooling or post-compulsory vocational training (Woodhead et al., 2009, p.26). Even at 15 years, young people's aspirations of completing university

were high (Pells, 2011b, p.12, Figure 3). But whilst expectations were high, qualitative research suggests a growing recognition as children approach adolescence that school may not be life changing, indeed that remaining enrolled might be a risk if it prevents acquisition of vocational skills with a more certain pay off (Pells, 2012, p565; Camfield, 2011, p.690).

That aspirations are high is also demonstrated by the lengths families go to in order to secure an education for their children. Financial sacrifices are discussed in Section 2. There is also evidence of migration being used as an active strategy with children sent to live with other family members in order to access better schooling (Crivello, 2009; Boyden, 2013; Crivello, 2011). Such decisions may be encouraged by policy, such as boarding schools provided for poorer girls in Andhra Pradesh, e.g. provided by Integrated Tribal Development Agency (Streuli et al 2011).

But while such migration may open up new opportunities, it also presents 'social risks' such as the reputational risk for girls if they are assumed to have had more unsupervised association with boys, which would be controlled if they had been living within the 'protective' family unit. Such risks may undermine marriageability of women (Pells and Woodhead, 2014, p.63). And even if schooling does not require migration, the later stages of schooling may involve longer, and more dangerous journeys. Such journeys prompt concerns of sexual violence reported by young women in Ethiopia and Andhra Pradesh, creating a barrier to on-going attendance (Chuta and Crivello, 2013, p.10; Morrow 2013b, p.91).

Recognising the importance of social risks is helpful in also understanding how and why children and households make choices about work, migration, and so on. A stark example of the felt importance of young women's good social reputation is revealed by accounts of harmful traditional practices in Ethiopia. Such practices have often been deemed important as a rite of passage for girls but are increasingly outlawed as representing a danger. Qualitative research highlights occasions where, without necessarily consulting parents, young women agree to undergo such practices, precisely to be seen to protect their reputations (Boyden et al., 2013).

Evidence from Andhra Pradesh shows that by the age of 12 years girls reported the importance of learning skills (and not being 'over-educated') which would give them the reputation of behaving like a 'good' wife and increase their chances of being accepted by future parents-in-law (Morrow, 2013b, p.96). In both cases the risk of being seen to break social norms has a negative impact on marriageability, and so on future prospects for family and security; in both cases the impact on young women was particularly acute.

From young ages children spend considerable periods of time involved in often unpaid work, frequently alongside schooling. Such work can be starkly gendered, with girls more likely to work within the home, and boys outside it (for Ethiopia see, for example, Orkin, 2011, p.26). Such work can

undermine schooling, and presents some harm, for example in Andhra Pradesh both physical hazards (such as wounds while harvesting and pesticides exposure) and psychosocial effects, such as being looked down on and bullied by peers (Morrow and Vennam, 2012, p.557). However, work is not only reported as an unpleasant or onerous responsibility but sometimes as a source of pride for children, who feel that they are contributing to the management of the household (Crivello and Boyden, 2011, p.9; Morrow and Vennam, 2012, p.554) and learning useful skills (Morrow and Vennam, 2012, p.553). In short, the shifting balance of attending school and/or working within and outside the home affects children very differently according to their situation, and is one of the factors contributing strongly to diverging life trajectories.

Violence features frequently in children's accounts, both within households and communities and in school (for instance, Pells et al., forthcoming; Ames and Rojas, 2010; Morrow and Vennam, 2012, p.553; Hang and Tam, 2013, p.17). Assessing incidence is problematic since it may be played down by victims who are normalised to it, or who may be fearful of reporting it. However one-third of 15-year-olds in the sample in Peru (more girls than boys) and slightly more than one in ten of the Vietnamese sample (more boys than girls) do report being physically hurt by a family member, with smaller numbers reporting being physically hurt by a stranger (Pells and Woodhead, 2014, p.69).

Analysis of qualitative evidence identifies violence as often related to pre-existing gender role norms, with additional tensions where roles are changing, such as women increasingly entering formal employment (Pells et al., forthcoming). Violence within the school is also reported as commonplace in Young Lives data, with an institutionalised pattern of teachers beating students and this violence replicated by the students against each other (Arangoitia, 2011). Actual or anticipated violence features in children's experience of making the transition between schools. Ames and Rojas (2010) report violence and bullying for boys together with sexual harassment for girls as a concern of children as they transition to (often larger) secondary schools. Both perception and realities of sexual and physical violence can further undermine participation in the later stages of schooling.

In summary:

- The global rise of education places schooling central to perceptions of the good life through childhood. Parents and children invest heavily, making difficult choices to support a good education. Such a generational shift is however reliant not only on schooling but on sufficient jobs capitalising on education.
- Across the early life course, systemic differences occur between social groups in time spent in enrolled in school. Differences in access are often associated with differences in opportunities to learn, thus compounding disadvantage for some young people. Such accumulations of disadvantage are not inevitable with evidence from Vietnam showing evidence of cogitative catch up of disadvantaged learners. School systems able to deliver good opportunities to learn for poorer pupils can therefore narrow gaps.
- Roles widen through later childhood. School becomes more important, but so do care and other forms of work. Children's work is a feature of how young people's responsibilities expand. Whilst work undoubtedly can undermine schooling, this is not inherent, and work also provides an active coping strategy for poverty and may assist young people in learning useful (and marketable) skills.
- In these studies, as adulthood approaches, social reputations often become more important, particularly for girls. Children and parents may resist actions, such as sending children long distances to school if these are perceived to place young people at risk. Whilst risks include those to health or personal safety, risks to reputation are very real where they undermine later marriageability.
- There are a number of key triggers to leaving school early which can be shown using longitudinal analysis. Triggers include not only household poverty and the need to work, but poor school performance, exacerbated by cliff edges such as national exams. Violence and sexual harassment is also a commonly reported concern in schools. Addressing such triggers provides retention strategies for keeping young people in school for longer.

5. Implications for policy and programming

This paper set out to examine what Young Lives research on the life course could offer to inform better policy for children – to give every child the best start in life, and particularly to ensure that those who are at risk of being 'left behind' can access interventions and support to maximise their capacities, opportunities and well-being.

Section 1 of the paper traced children's trajectories, with a focus of the earlier stages of life. Inequalities are well established early in life, reinforcing the importance of the early years. Interconnections between domains of development highlight that good development in one domain of

life is often also supportive of others. Life course analysis reveals a less deterministic, more dynamic story than is sometimes told, and can be masked in cross sectional data. Considerable change happens in children's lives and development after the very earliest years. So, whilst the case for prevention and early intervention remains highest priority, this evidence is suggestive of opportunities to support children who have experienced early disadvantage, and to protect early gains by preventing faltering through, for example, adequate nutrition programmes and quality preschool and primary education.

Section 2 set children's development in the context of households which, since the majority of children grow up in households, both shape development directly and mediate wider economic and social influences, risks and opportunities. Household composition, as well as the resources the household can access, affect opportunities open to children as well as their resilience to dealing with shocks and adverse circumstances. Importantly, household influences are also dynamic through the life course, with the youngest children often in the most resource poor households. The role of household decision-making in opening up opportunities for children or reinforcing traditional pathways through school and work can be crucial for children's outcomes. Household level policy interventions, particularly social protection targeting income security and extending access to affordable health care, are an opportunity to reduce the need of households to choose between children as regards who receives investment, for example whether a girl or boy stays in school.

Section 3 identified the role of school as central to many children's lives, noting also the impact of the rise of schooling on perceptions of the social value of education. 'Doing well' is now often seen in terms of being in school and progressing through school. Longitudinal data vividly shows the range of different trajectories through schooling, for different cohorts of children, with evidence that late enrolment, slow grade progress and poor performance are all risk factors for early school exit. Education is frequently heralded as giving children the best start in life, yet school systems all too often amplify inequities. There are encouraging exceptions in Young Lives data, notably from Vietnam, with important lessons for governance, pedagogy and professional training.

In conclusion, we offer key three messages:

1. Effective policies support multidimensional lives

The evidence reviewed in this paper highlights that poverty affects many different aspects of children's lives: their healthy development, cognitive capacities and also their psychosocial well-being. We have also shown that these dimensions of development interact through development. By doing so we highlight a disjuncture between how lives are lived and policy planned: children's lives are lived multi-dimensionally even if services are most often delivered sectorally. Sector success, in education, health care or

child protection, is often dependent on the actions of others beyond that sector (health, nutrition, economic, social protection). Such sectors therefore should have an interest in collaborating. The concept of more comprehensive, more inter-sectoral and more integrated programming is relatively easy to convey. But the challenges of delivering on that concept are clearly substantial, not least because each sector typically involves complex and multi-layered systems of governance and financing, from central government policy to programme delivery via community-based services. Each sector is also expressed through highly articulated professional skills and research tradition, which would not necessarily benefit from full harmonization, even if that were practicable.

While some countries have highly centralized, well resourced and managed integrated systems, most are more fragmented and dispersed, especially where there are resource, capacity and governance gaps, and where private and public sector services coincide but rarely coordinate. The gradual expansion of social protection in many countries provides one important foundation for supporting holistic development, while development of integrated (or at the very least coordinated) models at the level of service delivery provides another (see Woodhead 2014 for further discussion), the increased role of the school in children's lives highlights its potential as a delivery platform for other policies.

2. Early intervention is a priority, plus later remediation

Analysis of cohort data suggests the need for a balance between early and later intervention. Early intervention has proven efficacy and the impact of some early deprivations may be irreversible or hard to shift later in life. Preventative measures – in the early years of life, and before – provide the essential foundation for pro-child policy. But whilst necessary, this is not sufficient. Cohort data suggests that some children falter in their growth trajectories after infancy. Analysis suggests other children physically recover from early stunting, and that such recovery is associated with learning gains. Taking all this evidence into account raises several strategic issues around the planning of programmes and services:

- how far are they time critical (e.g. akin to one-off vaccinations) versus requiring sustained engagement through the life course (e.g. social protection programmes or environmental/housing programmes)?

- what is the appropriate balance between preventive policies (e.g. targeting maternal education, nutrition and mental health); early intervention (e.g. via a preschool programme) and later remediation (e.g. via school nutrition), recognizing these are not in practice alternatives?

- what role does each element of a comprehensive inter-sectoral strategy play in a theory of change towards reducing inequalities and ensuring no one is left behind?

Dynamism in children's development after infancy has been discussed in this paper in terms both of physical development, and learning trajectories. In both cases poverty and social disadvantage, including parental education, are associated with either a lower chance of recovering, or of faltering. Anti-poverty policies therefore, are important to providing a supportive foundation to increase the chances of recovery. There are some more specific conclusions to be drawn also. In India we find evidence of the protective effects of school meals on young children in school in drought affected communities (Singh et al, 2012). In Ethiopia a link has been drawn between better sanitation policies and improved physical recovery. That children do not always benefit equally from the impact of the school is a serious policy challenge, but evidence from Vietnam shows that schools can play that equalizing role.

3. Identifying critical entry points is a priority to prevent pathways diverging

Perpetuating cycles of disadvantage are often socially and institutionally transmitted. From this paper we can identify a series of key transition points, which may provide programming opportunities and 'entry points' to alter this transmission.

Firstly, household lifecycle and family illness, parental absence or death mediates children's experiences. Younger, less established, households are often those with young children, and so also high needs. Targeting social protection towards households with young children is consistent with focusing attention on the early years and provides a relatively simple way to reach households with higher needs. Illness, absence or death of parents or other household members all have consequences for health costs and lost earnings as well as work and care responsibilities of children. Such constraints may have differential impacts on girls and boys, and by age or birth order. Policy efforts can work towards preventing ill-health, provide social protection, as well as strengthen families to reduce adverse impacts on children.

Secondly, trajectories through schooling are marked by key transitions. A key element of the case for early childhood interventions is that these support readiness for primary schooling, but poorer children are least likely to experience preschool. Extending the reach of services provides a strategy to help all children to be ready to learn. Whilst education is highly prized, through middle and later childhood it combines with other, growing responsibilities. As the need to work increases so the challenge to enable young people to stay in school grows. Transitions from primary to secondary schools may exacerbate safety concerns. For example, the onset of adolescence and menarche emphasizes the importance of gender segregated toilets if girls are to regularly attend. Violence within secondary

school, as well as during travel is reported by girls and boys as a barrier to sustained attendance. Both physical and sexual harassment was reported. And since low school attainment increases the chance of leaving school early, focusing teacher attention on those who are slipping behind is an important strategy to improve retention.

Thirdly, during later phases of childhood, many of the pressures on young people are framed through a lens of social roles and responsibilities – put simply, for girls later marriageability; for boys the ability to provide. Such a context has demonstrable effects on decisions taken by, or for, young people – girls choosing to undergo particular (sometimes damaging) rites of passage to protect their reputations or leaving school earlier so as either not to be 'over-educated' or perceived to have consorted too much with boys; or parents investing differentially in children's education mindful of later returns to the household. Such perceptions highlight the need to see individual decision making within a wider context of what shapes this, which means engaging with the household dynamics, social norms and economic context of why decisions are taken. To abstract individual experiences from the context in which they occur, is to limit intervention options.

In short, a life course approach to policy recognises the multiple entry points for intervention from before birth through to adult life, and intergenerationally. There may be only a few critical periods, but there are many critical episodes.

Finally, a word on the potential role of longitudinal cohort studies, mindful of calls for a data revolution (UN, 2013) and of the need for data to 'Lighting the way' towards Sustainable Development Goal objectives, as the UN Secretary General has put it (UNSG, 2014). To deliver good policy advice, such a revolution requires not more timely disaggregated cross sectional information, but also tools that help explain why problems occur and evaluate options. Cohort studies offer greater explanatory power to time-bound cross-sectional analysis, and they are complementary to rigorous but often quite narrowly focussed and decontextualized RCTs (Randomized Controlled Trials). Longitudinal studies can provide insight into the dynamic processes and influences on development across the life course, and as such they can check assumptions and open up new policy options towards post-2015 objectives.

References

Alderman, H. and S., Walker (2014). Enhancing Resilience to Nutritional Shocks. 2020 Conference Brief 17. May 17-19, Addis Ababa, Ethiopia. Washington, D.C.: International Food Policy Research Institute (IFPRI). http://ebrary.ifpri.org/cdm/ref/collection/p15738coll2/id/128139

Ames, P, V. Rojas, and T. Portugal (2009). Starting School: Who is Prepared? Young Lives' Research on Children's Transition to First Grade in Peru, *Working paper 47*, Oxford: Young Lives.

Ames, P. and V. Rojas (2010). Change and Opportunity: The Transition from Primary to Secondary School in Rural and Urban Peru, *Working Paper 63*, Oxford: Young Lives.

Ames, P., V. Rojas, and T. Portugal (2010). Continuity and Respect for Diversity: Strengthening Early Transitions in Peru, Bernard van Leer Foundation *Working Papers in Early Childhood Development* 56, The Hague: Bernard van Leer Foundation.

Ames, P. (2013). Learning to Be Responsible: Young Children Transitions outside School, *Learning, Culture and Social Interaction* 2: 143-154. DOI: 10.1016/j.lcsi.2013.04.002.

Arangoitia, V. (2011). 'I'd rather be hit with a stick...Grades are sacred': Students' Perceptions of Discipline and Authority in a Public High School in Peru, *Working Paper 70*, Oxford: Young Lives.

Ben-Shlomo, Y. and D. Kuh, (2002). A Life Course Approach to Chronic Disease Epidemiology: Conceptual Models, Empirical Challenges and Interdisciplinary Perspectives, *International Journal of Epidemiology,* Volume 31, pp. 285-293.

Bird, K. and K. Higgins, (2011). Stopping the Intergenerational Transmission of Poverty: Research Highlights and Policy Recommendations, *Working paper 214*, Manchester: Chronic Poverty Research Centre.

Black, R., L. Allen, Z. Bhutta, L. Caulfield, M. de Onis, M. Ezzati, C. Mathers, and J. Rivera (2008). Maternal and Child Undernutrition: Global and Regional Exposures and Health Consequences, *The Lancet*, Vol 371 pp. 243-260.

Boyden, J. (2009). Risk and Capability in the Context of Adversity: Children's Contributions to Household Livelihoods in Ethiopia, *Children, Youth and Environments* 19(2), pp. 111-137.

Boyden, J. (2013). 'We're not going to suffer like this in the mud': Educational Aspirations, Social Mobility and Independent Child Migration among Populations Living in Poverty, *Journal of Comparative and International Education*, 43:5, 580-600, DOI:10.1080/03057925.2013.821317.

Boyden, J., A. Pankhurst and Y. Tafere (2013). Harmful Traditional Practices and Child Protection: Contested Understandings and Practices of Female Child Marriage and Circumcision in Ethiopia, *Young Lives Working Paper 93,* Oxford: Young Lives.

Britto, P., H. Yoshikawa, J. van Ravens, L. Ponguta, M. Reyes, S. Oh, R. Dimaya, A. Nieto, and R. Seder (2014). Strengthening Systems for Integrated Early Childhood Development Services: A Cross-national Analysis of Governance, *Annals of the New York Academy of Sciences 1308*, p. 245–255.

Bronfenbrenner, U. (1979). The Ecology of Human Development: Experiments by Nature and Design, Harvard University Press, Cambridge, MA.

Cameron, L. (2009). Does 'Improved' Sanitation Make Children Healthier? Household Pit Latrines and Child Health in Rural Ethiopia, *Working Paper 42*, Oxford: Young Lives.

Camfield, L., (2011). 'From School to Adulthood'? Young People's Pathways Through Schooling in Urban Ethiopia, *European Journal of Development Research*, 23, 679–694. doi:10.1057/ejdr.2011.33

Camfield, L. and Y. Tafere (2009). 'Children with a Good Life Have to Have School Bags': Diverse Understandings of Well-being among Older Children in Three Ethiopian Communities, *Working Paper 37*, Oxford: Young Lives.

Carter, B. and M. McGoldrick (1999). The Expanded Family Lifecycle: Individual, Family and Social Perspectives (3rd Ed.). Boston: Allyn & Bacon.

Chuta, N. and G. Crivello (2013). Towards a 'Bright Future' Young People Overcoming Poverty and Risk in Two Ethiopian Communities, *Working Paper 107*, Oxford: Young Lives.

Chzhen, Y. (2012). Formal and Informal Social Protection: Distributional Analysis of Transfers, Evidence from Vietnam and India. Unpublished background paper for Young Lives.

Crivello, G. (2009). 'Becoming Somebody': Youth Transitions through Education and Migration – Evidence from Young Lives, Peru, *Working Paper 43*, Oxford: Young Lives.

Crivello, G. (2011). 'Becoming Somebody': Youth Transitions through Education and Migration in Peru, *Journal of Youth Studies*, 14:4, 395-411.

Crivello, G., and J. Boyden (2011). Situating Risk in Young People's Social and Moral Relationships: Young Lives Research in Peru, *Working Paper 66*, Oxford: Young Lives.

Crookston, B., W. Schott, S. Cueto, K. Dearden, P. Engle, A. Georgiadis, E. Lundeen, M. Penny, A. Stein and J. Behrman (2013). 'Post-infancy Growth, Schooling, and Cognitive Achievement: Young Lives', *American Journal of Clinical Nutrition*, November 2013 (published early on-line: Sept 2013, doi: 10.3945/ajcn.113.067561)

Cueto, S., J. Escobal, M. Penny and P. Ames (2011). Tracking Disparities: Who Gets Left Behind? Initial Findings from Peru, Round 3 Survey Report, Oxford: Young Lives.

Cueto, S. and J. Leon, (2012). Psychometric Characteristics of Cognitive Development and Achievement Instruments in Round 3 of Young Lives, Technical Note25, Oxford: Young Lives.

Cunha, F. and J. Heckman (July 2010). Investing in Our Young People, IZA DP No. 5050; *Discussion Paper Series*, Forschungsinstitut zur Zukunft der Arbeit [Institute for the Study of Labor].

Dercon, S. (2008). Children and the Food Price Crisis, *Policy Brief 5*, Oxford: Young Lives.

Dercon, S., and A. Singh (2011). From Nutrition to Aspirations and Self-Efficacy: Gender Bias over Time among Children in Four Countries, *Working Paper 71*, Oxford: Young Lives.

Dercon, S. and A. Sanchez (2013). Height in Mid Childhood and Psychosocial Competencies in Late Childhood: Evidence from Four Developing Countries, *Economics & Human Biology* 04/2013; DOI: 10.1016/j.ehb.2013.04.001.

Dewey, K. and K. Begum (2011). Long-term Consequences of Stunting in Early Life, *Maternal and Child Nutrition*, Supplement 3, pp. 5–18.

Diers, J. (2013). Why the World Needs to Get Serious About Adolescents: A View From UNICEF, *Journal of Research on Adolescence*, 23(2), 214–222.

Dornan, P. and J. Boyden (2011). Putting Children at the Centre of Poverty Debates, *Policy Brief 12*, Oxford: Young Lives.

Dornan, P., M .J. Ogando Portela, and K. Pells (2014). Climate Shocks, Food and Nutrition Security: Evidence from the Young Lives Birth Cohort Study, Background paper for Oxfam.

Dornan, P. and M. J. Ogando Portela (2014). How Does Where Children Live Affect How They Develop? Evidence from Communities in Ethiopia and Vietnam, Chapter 1 in M. Bourdillon and J. Boyden, *Growing up in Poverty: Findings from Young Lives*, London: Palgrave.

Dornan, P and K. Pells (2014). From Infancy to Adolescence: Growing Up in Poverty, Preliminary Findings from Round 4 of Young Lives, Oxford: Young Lives.

Dornan, P. and M. J. Ogando Portela (forthcoming). Do Feelings of Shame Undermine Children's Development? *Working Paper*, Oxford: Young Lives.

Duc, Le Thuc, Nguyen Thang, Nguyen Van Tien, Mai Thuy Hang and Vu Thi Thu Thuy (2011). How do Children Fare in the New Millennium? Initial Findings from Vietnam, Round 3 Survey Report, Oxford: Young Lives.

Duc, Le Thuc, (2011). Height and Cognitive Achievement of Vietnamese Children, *World Development*, 39.12: 2211-2220.

Duc, Le Thuc, and Tran Ngo Minh Tam, (2013). Why Children in Vietnam Drop out of School and What They Do After That, *Working Paper 102*: Oxford: Young Lives.

Elder, G. (1999). *Children of the Great Depression: Social Change in Life Experience* 25th Anniversary Edition (first published 1974), Westview.

Eming Young, M. (ed) with L. Richardson (2007). Early Child Development From Measurement to Action: A Priority for Growth and Equity, Washington: World Bank.

Eriksson, J. (2005). The Fetal Origins Hypothesis –10 Years On, *British Medical Journal*, Volume 330, pp. 1090-1091.

Escobal J. and E. Flores (2008). An Assessment of the Young Lives Sampling Approach in Peru, *Technical Note 3*, Oxford: Young Lives.

Fink, G, and P. Rockers (2014). Childhood Growth, Schooling and Cognitive Development: Further Evidence from the Young Lives Study, *American Journal of Clinical Nutrition*, vol. 100. no. 1, pp. 182-188.

Frost, M and C. Rolleston (2013). Improving Education Quality, Equity and Access: A Report on Findings from the Young Lives School Survey (Round 1) in Ethiopia, *Young Lives Working Paper 96*, Oxford: Young Lives.

Galab, S., V. Kumar, P. Reddy, R. Singh and U. Vennam (2011). The Impact of Growth on Childhood Poverty in Andhra Pradesh: Initial Findings from India, Round 3 Survey Report, Oxford: Young Lives.

Galab, S., U. Vennam, A. Komanduri, L. Benny and A. Georgiadis (2013a). The Impact of Parental Aspirations on Private School Enrolment, *Working Paper 97*, Oxford: Young Lives.

Galab, S., P. Reddy and V. Reddy (2013b). Primary Schooling in Andhra Pradesh: Evidence from Young Lives School-based Component, *CESS Monograph 30*, Hyderabad.

George, L., (1993). Sociological Perspectives on Life Transitions, *Annual Review of Sociology*, Vol. 19, pp. 353-373.

Glewwe, P., Q. Chen and B. Katare (2012). What Determines Learning among Kinh and Ethnic Minority Students in Vietnam? An Analysis of the Round 2 Young Lives Data, *Working Paper 80*, Oxford: Young Lives.

Grantham-McGregor, S, Y. Bun Cheung, S. Cueto, P. Glewwe, L. Richter, Strupp, B., (2007). Developmental Potential in the First 5 Years for Children in Developing Countries, *The Lancet* Volume 369, Issue 9555, 6–12, pp. 60–70.

Green, L. (2010). *Understanding the Life Course*, Sociological and Psychological Perspectives, Cambridge: Polity Press.

Guerrero, G., J. Leon, E. Rosales, M. Zapata, S. Freire, S. Saldarriaga, and S. Cueto, (2012). Young Lives School Survey in Peru: Design and Initial Findings, *Working Paper 92*, Oxford: Young Lives.

Hang, Nguyen Thi Thu and Tran Ngo Thi Minh Tam (2013). School Violence Evidence from Young Lives in Vietnam, Vietnam Policy Paper 1.

Heissler, K. and C. Porter (2013). Know Your Place: Ethiopian Children's Contributions to the Household Economy, European Journal of Development Research 25(4): 600-620.

Helmers, C. and M. Patnam (2011). The Formation and Evolution of Childhood Skill Acquisition: Evidence from India, *Journal of Development Economics* 95 (2011) pp. 252–266.

Himaz, R . (2009). Is There a Boy Bias in Household Education Expenditure? The Case of Andhra Pradesh in India Based on Young Lives Data, *Young Lives Working Paper* 46, Oxford: Young Lives.

Himaz, R. (2013). Impact of Parental Death in Middle Childhood and Adolescence on Child Outcomes, *Journal of African Economies* 22 (3): 463-490.

James, Z. and M. Woodhead (2014). Choosing and Changing Schools in India's Private and Government Sectors: Young Lives evidence from Andhra Pradesh, *Oxford Review of Education*, Vol. 40, No. 1, pp. 73–90.

Jeffrey, C. (2010). Geographies of Children and Youth I: Eroding Maps of Life', *Progress in Human Geography* Volume 34(4) (2010) pp. 496–505.

Jerrim, J. and A. Vignoles (2013). Social Mobility, Regression to the Mean and the Cognitive Development of High Ability Children from Disadvantaged Homes, *Journal of the Royal Statistical Society: Series A (Statistics in Society)*, Volume 176, Issue 4, pp. 887–906.

Johnson-Hanks, J. (2002). On the Limits of Life Stages in Ethnography: Toward a Theory of Vital Conjunctures, *American Anthropologist* Vol. 104, No. 3 pp. 865-880.

Krishna, A. (2007). For Reducing Poverty Faster: Target Reasons for Before People, *World Development*, volume 35, number 11, pp. 1947-1960.

Kumra, N. (2008). An Assessment of the Young Lives Sampling Approach in Andhra Pradesh, India, Technical Note 2, Oxford: Young Lives.

Lake, T. and M. Chan (September 2014). Putting Science into Practice for Early Child Development, *The Lancet*, http://dx.doi.org/10.1016/S0140-6736(14)61680-9

Lenhardt A and A. Shepherd (2013). What Has Happened to the Poorest 50%? *Challenge Paper* 1 Chronic Poverty Advisory Network, Overseas Development Institute, London.

Lewin, K, (2011). Making Rights Realities: Researching Educational Access, Transitions and Equity, CREATE, University of Sussex.

Lloyd, C. (ed.) (2005). Growing up Global: The Changing Transitions to Adulthood in Developing Countries, National Research Council and the Institute of Medicine, Washington D.C: The National Academies Press.

Lopez Boo, F. and M. Canon, (March 2013). Cognitive Skills Gaps in India: Can (late) Nutrition Ameliorate Them?, Inter-American Development Bank Working Paper.

Lundeen, E., J. Behrman, B. Crookston, K. Dearden, P. Engle, A. Georgiadis, M. Penny and A. Stein (2013). Growth Faltering and Recovery in Children Aged 1-8 Years in Four Low- and Middle-income Countries: Young Lives, *Public Health Nutrition* pp. 1-7.

Masten, A and D. Cicchetti (2010). Developmental Cascades. *Development and Psychopathology*, Volume 22, pp. 491-495.

Morrow, V. (2013a). Whose Values? Young People's Aspirations and Experiences of Schooling in Andhra Pradesh, India, *Children & Society* 27(4): 258-69.

Morrow, V. (2013b). Troubling Transitions? Young People's Experiences of Growing Up in Poverty in Rural Andhra Pradesh, India, *Journal of Youth Studies* 16(1): 86-100.

Morrow, V., I. Barnett, and D. Vujcich (2014). Understanding the Causes and Consequences of Injuries to Adolescents Growing up in Poverty in Ethiopia, Andhra Pradesh (India), Vietnam and Peru: A Mixed Method Study', *Health Policy and Planning*, 29 (1): 67-75.

Morrow, V. and U. Vennam (2012). Children's Responses to Risk in Agricultural Work in Andhra Pradesh, India, *Development in Practice* 22 (4): 549-561.

Mortimer, J. and M. Shanahan (2004). Handbook of the Life Course, *Handbooks of Sociology and Social Research*, Springer.

Murray, H. (2010). Early Childhood Care and Education as a Strategy for Poverty Reduction: Evidence from Young Lives, *Policy Brief 9*, Oxford: Young Lives.

Murray, H. (2012). Is School Education Breaking the Cycle of Poverty for Children? Factors Shaping Education Inequalities in Ethiopia, India, Peru and Vietnam, *Young Lives Policy Paper* 6, Oxford: Young Lives.

Nguyen, N. P. (2008) An Assessment of the Young Lives Sampling Approach in Vietnam, *Technical Note 4*, Oxford: Young Lives

Nguyen Tien Dung (2013). Shocks, Borrowing Constraints and Schooling in Rural Vietnam, *Working Paper 94*, Oxford: Young Lives.

Olinto, P, K. Beegle, C. Sobrado and H. Uematsu (October 2013). The State of the Poor: Where Are the Poor, Where is Extreme Poverty Harder to End, and What is the Current Profile of the World's Poor? *Economic Premise Note 125,* Washington DC: World Bank.

Open Working Group (OWG) (2014). *Open Working Group Proposal for Sustainable Development Goals*, United Nations.

Orkin, K. (2011). 'If God Wills…Next Year I Will Send her Back to School': The Effects of Child and Parental Illness on School Participation in Rural Ethiopia, *Research Monograph* No. 60, University of Sussex, CREATE.

Orkin, K., W. Yadete, and M. Woodhead (2012). Delivering Quality Early Learning in Low-resource Settings: Progress and Challenges in Ethiopia, *Working Papers in Early Childhood Development* 59, Bernard van Leer Foundation.

Outes-Leon, I. and C. Porter (March 2013). Catching Up from Early Nutritional Deficits? Evidence from Rural Ethiopia, *Economics and Human Biology* Volume 11, Issue 2, March 2013, pp. 148–163.

Outes-Leon, I., C. Porter and A. Sánchez (2011). Early Nutrition and Cognition in Peru: A Within-Sibling Investigation, *IDB Working Paper Series* 241, Inter American Development Bank.

Outes-Leon, I. and A. Sanchez (2008). An Assessment of the Young Lives Sampling Approach in Ethiopia, *Technical Note* 1, Oxford: Young Lives.

Outes-Leon, I., A. Sanchez and O. Molinas (2010). Psychosocial Status and Cognitive Achievement in Peru, *Working Paper 65*, Oxford: Young Lives.

Pells, K. (2011a). Poverty, Risk and Families' Responses: Evidence from Young Lives. *Policy Paper 4*, Oxford: Young Lives.

Pells, K. (2011b) Poverty and Gender Inequalities: Evidence from Young Lives. *Policy Paper 3*, Oxford: Young Lives.

Pells K. and M. Woodhead (2014). Changing Children's Lives: Risks and Opportunities, Oxford: Young Lives.

Pells, K. (2012). 'Risky lives': Risk and Protection for Children Growing Up in Poverty, Development in Practice Volume 22, Issue 4.

Pells, K., P. Dornan and M. J. Ogando Portela (2013). Growing Up with the Promise of the MDGs: Children's Hopes for the Future of Development, London: Save the Children and Young Lives.

Pells, K., E. Wilson and Nguyen Thi Thu Hang (forthcoming). Gender Violence in the Home and Childhoods in Vietnam, in J. Parks (ed.) *Gender Violence in Poverty Contexts: The Educational Challenge*, London: Routledge.

Petrou, S. and E. Kupek (2010). Poverty and Childhood Undernutrition in Developing Countries: A Multi-national Cohort Study, *Social Science & Medicine* 71.7: 1366-1373.

Rolleston, C. and Z. James (2011). The Role of Schooling in Skill Development: Evidence from Young Lives in Ethiopia, India, Peru and Vietnam, Background paper prepared for the 'Education for All Global Monitoring Report' 2012 UNESCO: Paris.

Rolleston, C., Z. James, L. Pasquier-Doumer and Tran Ngo Thi Minh Tam, (2013a). Making Progress: Report of the Young Lives School Survey in Vietnam, *Young Lives Working Paper 100*.

Rolleston, C., Z. James and E. Aurino (2013b). Exploring the Effect of Educational Opportunity and Inequality on Learning Outcomes in Ethiopia, Peru, India, and Vietnam, Background Paper prepared for the 'Education for All Global Monitoring Report' 2013/4, Paris: UNESCO.

Rolleston, C. (2014). Learning Profiles and the 'skills gap' in Four Developing Countries: A Comparative Analysis of Schooling and Skills Development', *Oxford Review of Education*, Routledge.

Roseboom,T., van der Meulen, J, A. Ravelli, C. Osmond, D. Barker, O. Bleker, (2001). Effects of Prenatal Exposure to the Dutch Famine on Adult Disease in Later Life: An Overview, *Molecular and Cellular Endocrinology* 185, pp. 93–98.

Rutter, M. (2012). Resilience as a Dynamic Concept, *Development and Psychopathology*, Vol. 24, No. 2, p. 335-344.

Sameroff, A. (ed.) (2009). The Transactional Model of Development: How Children and Contexts Shape Each Other, American Psychological Association.

Sanchez, A. (2009). Early Nutrition and Cognitive Achievement in Preschool Children in Peru, *Working Paper 57*, Oxford: Young Lives.

Sanchez, A. (2013). The Structural Relationship between Nutrition, Cognition and Non-cognitive Skills: Evidence from Four Developing Countries, *Young Lives Working Paper 111*. Oxford: Young Lives.

Schaffer, H. (1996). *Social Development*, Oxford: Blackwell.

Schott, W., B. Crookston, E. Lundeen, A. Stein, J. Behrman and Young Lives Determinants and Consequences of Child Growth Project Team (2013). Periods of Child Growth up to Age 8 Years in Ethiopia, India, Peru and Vietnam: Key Distal Household and Community Factors, *Social Science & Medicine* 97: 278–87.

Seccombe, K. (2002). "Beating the Odds" Versus "Changing the Odds": Poverty, Resilience, and Family Policy, *Journal of Marriage and Family* 64: 384–94.

Shepherd, A., Scott, L., Mariotti, C., Kessy, F., Gaiha, R., da Corta, L., Hanifnia, K., Kaicker, N., Lenhardt, A., Lwanga-Ntale, C., Sen, B., Sijapati, B., Strawson, T., Thapa, G., Underhill, H., and Wild, L. (2014). Poverty Report 2014-2015: The Road to Zero Extreme Poverty, Chronic Poverty Advisory Network, Overseas Development Institute.

Singh, A. (2013). Size and Sources of the Private School Premium in Test Scores in India, *Working Paper 98*, Oxford: Young Lives.

Singh, A. (2014). Emergence and Evolution of Learning Gaps across Countries: Panel Evidence from Ethiopia, India, Peru and Vietnam, *Working paper 12*, Oxford: Young Lives.

Singh, A., A. Park, S. Dercon (2012). School Meals as a Safety Net: An Evaluation of the Midday Meal Scheme in India, *Working Paper 75*, Oxford: Young Lives.

Singh, R. and S. Sarkar, (2012). Teaching Quality Counts: How Student Outcomes Relate to Quality of Teaching in Private and Public Schools in India, *Working Paper 91*, Oxford: Young Lives.

Singh, R., and S. Sarkar (2014). The Relationship of Household Monetary Poverty and Multidimensional Child Deprivation: A Longitudinal Study of Children Growing Up in India, *Working Paper 121*, Oxford: Young Lives.

Streuli, N., U. Vennam and M. Woodhead (2011). Increasing Choice or Inequality? Pathways through Early Education in Andhra Pradesh, India, Bernard van Leer Foundation Working Paper 58, The Hague: Bernard van Leer Foundation.

Streuli, N, (2012). Early Childhood Care and Education in Peru: Evidence from Young Lives, *Policy Brief 18*, Oxford: Young Lives.

Tafere, Y. (2013). Intergenerational Relationships and the Life Course: Changing Relations between Children and Caregivers in Ethiopia, *Working paper 99*, Oxford: Young Lives.

UNESCO (2014). Teaching and Learning: Achieving Quality for All, Global Monitoring Report 2013/14, Paris: UNESCO.

UNICEF (2011). The State of the World's Children 2011: Adolescence An Age of Opportunity, New York, UNICEF.

UNICEF (2013). Improving Child Nutrition: The Achievable Imperative for Global Progress, New York: UNICEF.

UNICEF (2013). The State of the World's Children 2013, Children with Disabilities, New York: UNICEF.

United Nations (1989). Convention on the Rights of the Child, Geneva: United Nations Office of the High Commissioner for Human Rights.

United Nations (2013). A New Global Partnership: Eradicate Poverty and Transform Economies through Sustainable Development, The Report of the High-Level Panel of Eminent Persons on the Post-2015 Development Agenda, New York.

United Nations Secretary General (UNSG) (2014). The Road to Dignity by 2030: Ending Poverty, Transforming All Lives and Protecting the Planet, New York.

Vennam, U., G. Crivello and H. Kongara (2010). Children's Perspectives on Risk and Vulnerability in Contexts of Poverty and Change Findings from Andhra Pradesh, India, *Working Paper 64*, Oxford: Young Lives.

Vennam, U and J. Andharia, (2012). Chronic Poverty Amid Growth: Insights from Long-Term Poverty Trajectories, *Working Paper 84*, Oxford: Young Lives.

Vogler, P., G. Crivello, and M. Woodhead (2008). Early Childhood Transitions Research: A Review of Concepts, Theory and Practice, *Working Papers in Early Child Development* number 48, Bernard Van Leer Foundation.

Woldehanna, T., R. Gudisa, Y. Tafere and A. Pankhurst (2011). Understanding Changes in the Lives of Poor Children: Initial Findings from Ethiopia Round 3 Survey Round 3 Survey Report: Ethiopia, Oxford: Young Lives.

Woldehanna, T. (2009). Productive Safety Net Programme and Children's Time Use between Work and Schooling in Ethiopia, *Working Paper 40*, Oxford: Young Lives.

Woodhead, M. (2014). Early Childhood Development: Delivering Inter-sectoral Policies, Programmes and Services in Low-resource Settings, DFID/ HEART Topic Guide. http://www.heart-resources.org/topic/early-childhood-development/

Woodhead, M., P. Ames, U. Vennam, W. Abebe and N. Streuli (2009). Equity and Quality? Challenges for Early Childhood and Primary Education in Ethiopia, India and Peru, *Bernard van Leer Foundation Working Paper* 55, The Hague: Bernard van Leer Foundation.

Woodhead, M., P. Dornan and H. Murray (2013a). What Inequality Means for Children: Evidence from Young Lives, Oxford: Young Lives.

Woodhead, M., M. Frost and Z. James (2013b). Does Growth in Private Schooling Contribute to Education for All? Evidence from a Longitudinal, Two Cohort Study in Andhra Pradesh, India, International Journal of Educational Research, Volume 33, Issue 1, pp. 65–73.

World Health Organization (WHO) (2014). Health for the World's Adolescents: A Second Chance in the Second Decade, Geneva: World Health Organization.

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